JUL 14 54

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JULY 1954

# ccj COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR TRUCK AND BUS FLEET OPERATORS

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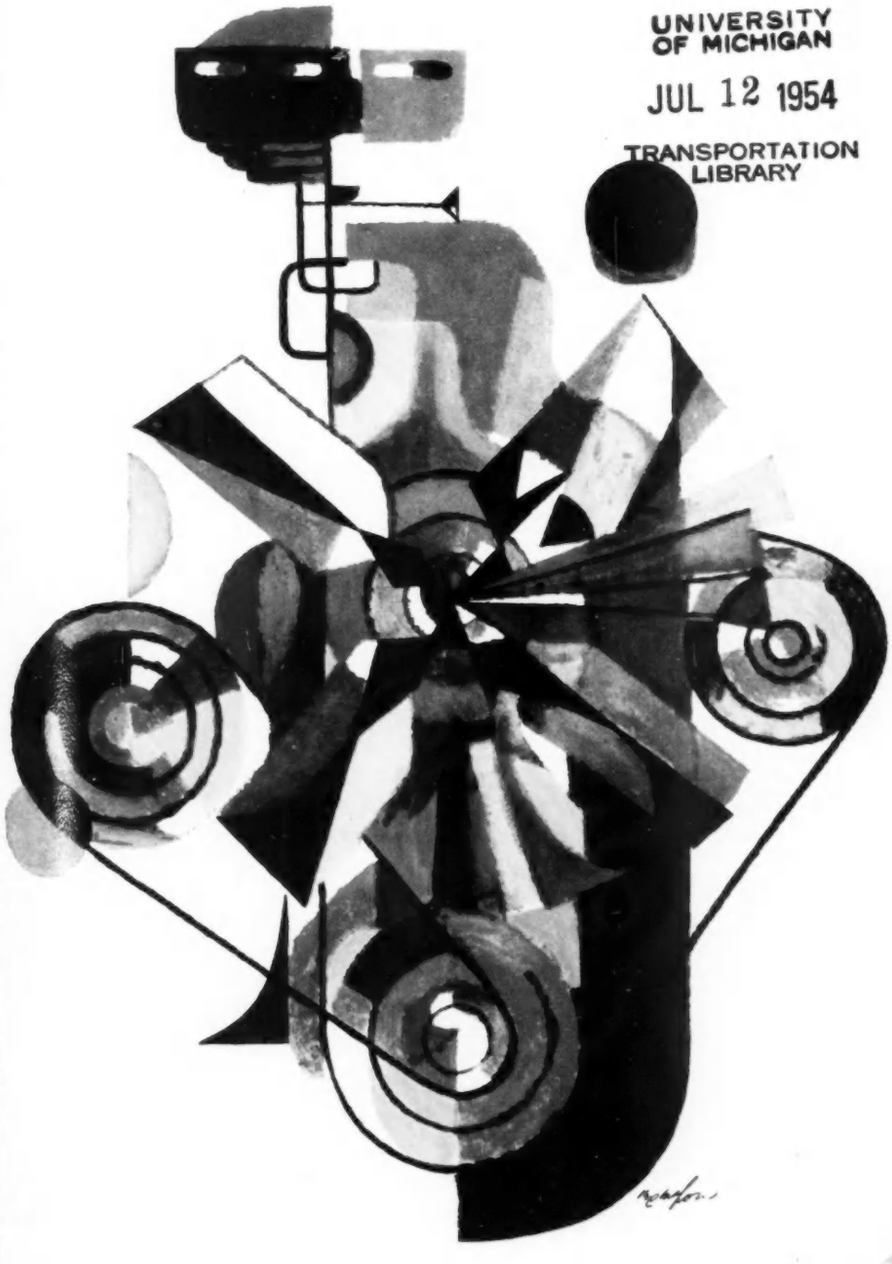

what makes a **modern** engine?

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Today's engines are judged by what they can do—not by large size. Weight saved is added to payload. Less gasoline per horsepower saves money on every run. And trouble-free operation is measured, in part, by ease and convenience of servicing.

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*Write for "Horsepower Is Our Business," by W. N. Walworth, REO Chief Engineer and recognized engine authority.*

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**Lansing 20, Mich.**

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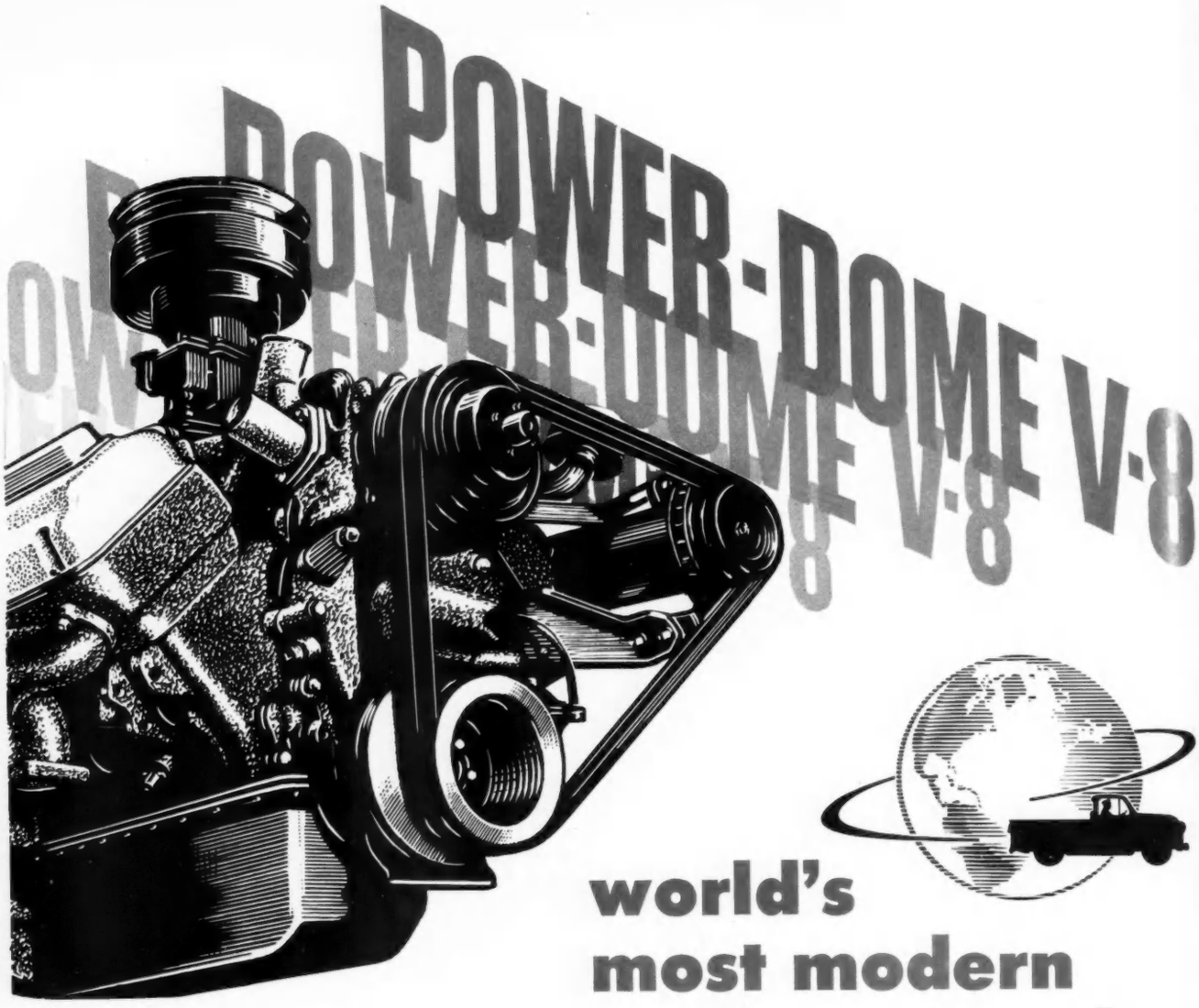


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**High-efficiency Power-Dome combustion!**
Exclusive V-8 dome-shaped combustion chambers make better use of heat than ordinary combustion chambers, expand gases more fully, and thus wring more power from every drop of fuel.

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Proved-in-action thrifty 6's are also available in most models! The all-inclusive power team of Dodge truck 6's and 8's adds up to the greatest array of truck engines ever built!

Here are the world's most *modern* truck engines . . . new Power-Dome V-8's . . . yours *only* with Dodge "*Job-Rated*" trucks! Here are the truck engines that attain the engineer's ideal of hemispherical combustion chambers and give you more piston power, higher efficiency, longer life than any others in the field! What's more, new Power-Dome V-8's are *standard equipment* on all Dodge tractors in the 38,000- to 48,000-lb. G.C.W. range! 153 h.p. in 2¾-ton, 172 h.p. in 3-, 3½-ton! See your dependable Dodge truck dealer *today!*

***Another important reason why there's A BETTER DEAL FOR THE MAN AT THE WHEEL . . . with new***

# DODGE "Job-Rated" TRUCKS

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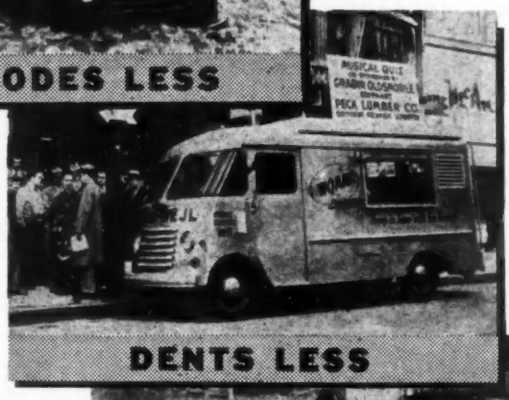

Thick Aluminum Alloy panels save 90% of routine denting.

**DENTS LESS**

Olson Bodies double the resale value of used trucks.

**SAVES MORE**

**HOW THICK SHOULD BODY METAL BE**

The ugliness of denting and the high cost of denting repairs is prevented by the use of ⅛"-thick aluminum alloy.

OLSON KURB-SIDE

ALUMINUM ALLOY BODIES BY Grumman

THE RIGHT delivery truck is a tool to enable a Routeman to deliver more, in less time and at lower cost. A route truck with a double-capacity, manhigh Delivery Body costs only a few thousand dollars to buy but $15,000 to $20,000 to operate and maintain during its long life (average 14 years) and costs from $70,000 to $100,000 for the Routeman's time in wages and commissions during its life.

The most economical route truck is the one that costs the least to operate and maintain and that *makes the best use of the Routeman's time* in:

1. **loading and unloading**
2. **getting through traffic**
3. **working the payload without fatiguing bending, thus saving 1 to 2 hours a day compared with a low panel unit.**

The very best delivery truck has a long-lived, lightweight Aluminum Alloy Body that accommodates more payload and saves time and money by:

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4. **by lasting longer and depreciating less.**

The "400" among delivery-truck executives know these economic truths and use trucks with bodies that save the time of Routemen and Garage Mechanics, so that they *get back their truck and body first cost, plus a profit*, through savings!

> **"We now use 12-ft. manhigh Aluminum Alloy Bodies on ¾-ton chassis. These Olson Kurb-Side units replaced 1½-ton trucks with big, heavy steel bodies, saving more than a ton of deadweight. Used on long routes, these new trucks save us more than $300 per truck a year in gasoline alone. They also cost less for tires, brake, clutch and body repairs, etc." My Bread Baking Co., New Bedford, Mass.**

The demand for Olson Kurb-Side Bodies keeps ahead of our constantly increasing production. Unless your dealer stocks fast selling units, he has to depend on body builders' "Pools" (that are always there for bodies not in demand). When a body merits ever increasing popularity, the demand wipes out the "Pool" but the far-sighted dealers who *stock* Olson Kurb-Sides can make quick deliveries.

Quality Route Trucks that save time and money, depreciate less and last longer, pay for themselves and a profit besides—through savings. Write us for a catalogue or see your dealer today—Chevrolet, Ford or GMC.

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1740 BROADWAY, NEW YORK 19, N. Y.

# COMMERCIAL CAR JO


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UP FRONT WITH CCJ

A concise, monthly report on fleet highlights


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# JOURNAL

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**There's no such thing as normal conditions in the fleet business!**

Traffic jam! Start. Stop. Dome lights, stop lights, directional lights—all wearing down the battery. Engine idling, then revving up again. Mighty tough on an ignition system, and especially on the voltage regulator. Yet over some of the roughest city bus runs in the world BLUE STREAK heavy-duty voltage regulators have operated flawlessly hundreds of thousands of miles.

The BLUE STREAK heavy-duty regulator has two contacts on the cutout armature to ease the "current burden," where most conventional regulators have only one. BLUE STREAK resistance wire is wound on a tough, non-warping, non-cracking heat-resistant fibre glass core. The bottom of the BLUE STREAK regulator is covered; protection for you and the regulator. (*A simple enough procedure, but only* BLUE STREAK *does it.*)

Whether you have a real traffic problem or not, you'll find that under any conditions BLUE STREAK heavy duty regulators are the best . . . and longest lasting . . . on the market. Write STANDARD MOTOR PRODUCTS, INC., 37-18 Northern Boulevard, Long Island City 1, New York.

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# The OVERLOAD

EDITORIAL COMMENT

## Underload vs Overload; Fact or Fantasy

FROM the current hurly-burly of confusion over "Piggy-Back" (see page 17) has emerged a brave new word. To *Time* magazine, which perhaps used it quite unwittingly, goes credit for a most effective new use of an old word. That word is *underload*.

In its issue of June 7 *Time* had an essay on piggy-back. Like nearly all such essays, it contained points with which we disagree. Also like nearly all such essays, it cited as one of the principal advantages of piggy-back the fact that it permits trailers to move between origin and destination without regard to intervening state regulations on sizes and weights. Said *Time* in part:

"A trucker operating over the roads between New York and Chicago, for example, must *underload* his trailer in order to meet requirements of Pennsylvania and Ohio."

That one is worth thinking about.

True enough *Time* erred in part of the statement (Ohio is comparable to both New York and Illinois on most combination weights). But it was dead right with regard to the famed "Erie Corridor" in northwestern Pennsylvania—long famous as a trap for technical violations.

Most of the piggy-back propaganda in recent months has come from the railroad side of the picture.

Could it be that the railroads themselves admit that many a truck operation is hampered by needless underload?

Could it be that the rails themselves know darn well the impossibility of carrying a profitable load in compliance with 48 different state regulations?

Could it even be that the Pennsylvania RR itself, now trying desperately to get ICC approval for carrying freight in its own trailers at tariffs comparable to motor carriers, knows it can't make a profit without finding a way to get around the highway weight laws in Pennsylvania which it has so long and so effectively sponsored?

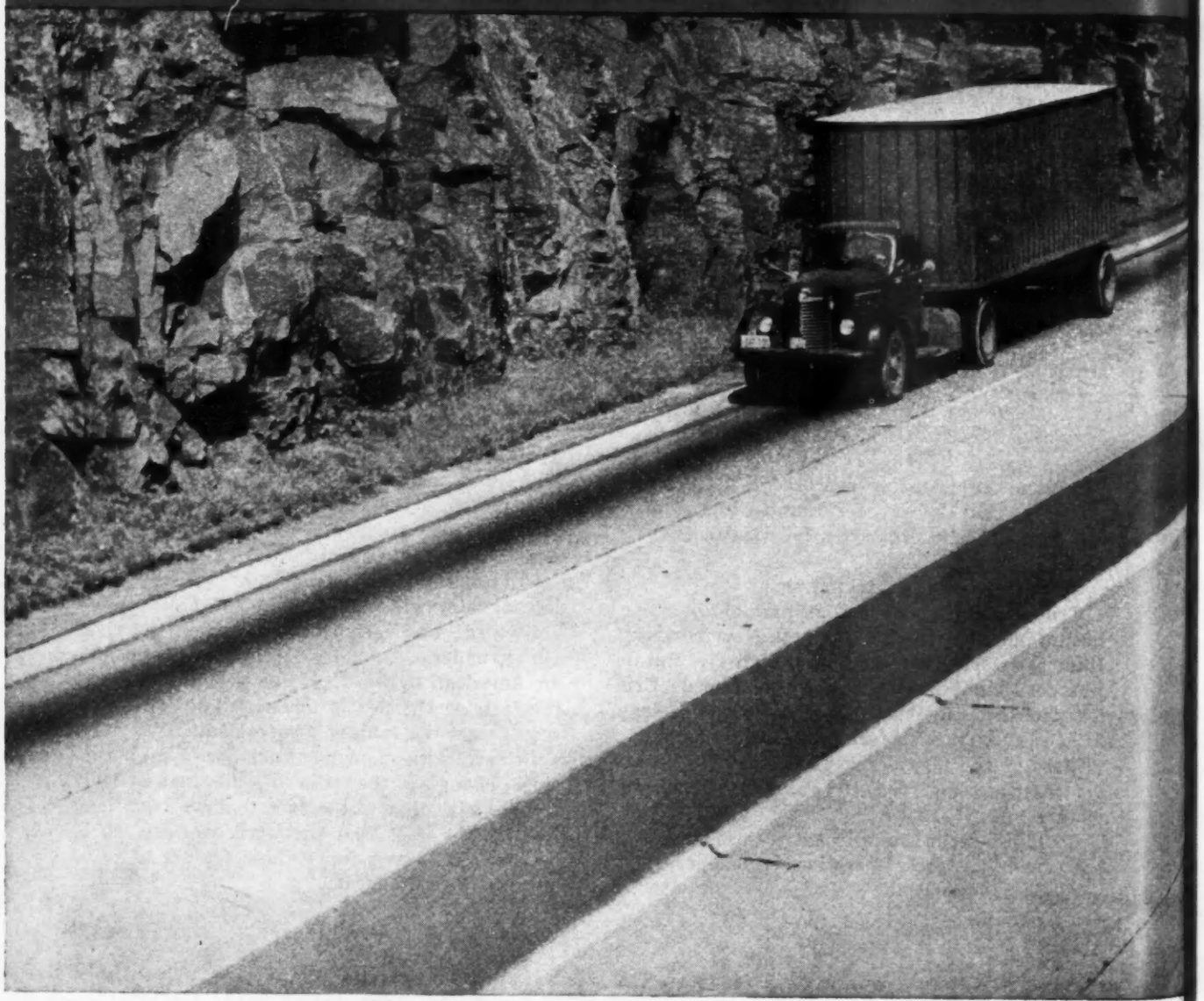
Piggy-back at the moment is a bit like the old army service command emblem described as a white star of hope, lost in a blue sea of confusion, surrounded by red tape. What with the ICC tariff suspension on June 15 and undoubtedly prolonged hearings which began June 28, it will be some time before any of the really big operations go into effect.

But whatever the outcome, we hope the trucking industry will not lose sight of *Time's* brave new word. Used often enough and in the right places, underload could well supplant overload as an American by-word. If the people could have the facts on the cost of underloading they would soon forget the fantasy of overloading.

In fact, with enough support, we'd even consider changing the title of this page. Only trouble with that is the fact that we have long lived in the hope that the word overload would be known only as a copyrighted feature of COMMERCIAL CAR JOURNAL.

Bart Rawson
Editor

# Let us help you MAINTENANCE



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# At Your Service

**TIMELY NOTES ON MAINTENANCE AND OPERATION**

by **MURRAY SIMKINS** Managing Editor

### Tape for Damaged Steering Wheels

BUS operators, troubled with the paint coming off steering wheels, have resorted to a neat trick in remedying the situation. They use a black Scotch tape, wrapping the wheel neatly along its entire circumference. This not only eliminates loosened enamel coming off and dirtying the driver's hands, but also provides a non-slip surface.

### Coated Nylon Tarplaulins

THERE has been a great deal of interest shown of late in coated nylon tarpaulins. At the ATA Spring Meeting in Cincinnati the subject was examined again with representatives from Du Pont and a manufacturer (Stern and Stern Textiles, Inc., of Hornell, N. Y.). Manufacturers outline several advantages of this type material. The coated nylon fabric is about half the weight of No. 8 duck, and as a result can be handled easily by one man. It has a tear resistance four to five times better than No. 8 tarpaulin duck. It is not susceptible to rot, oil, or cracking. Cemented seams make it completely water proof. An important factor mentioned at the conference was the ease in repairing the nylon fabric. The operator can make his own repairs with a cementing kit provided as simply as repairing a tire tube. This becomes a major consideration when it is realized that tarp maintenance may run as high as $50 a year in some fleets where work is sent out.

Coated nylon, however, runs about 65 per cent over tarpaulin in price. With higher production this figure may drop eventually. There was some concern expressed by the fleetmen concerning "sweating" of the undersurface, but indications point to the fact that proper ventilation will overcome this trouble. The matter of durability should be considered against this higher priced material. After a year and one half, exposure tests show that the nylon fabric has suffered no loss of strength.

### Distributor Service Must Be Precise

THE distributor must deliver up to 320 sparks per second, and each of these sparks must be delivered to the proper cylinder and timed exactly to the engine's requirements. Because of these extremely exacting requirements, it must be tested and adjusted with the greatest of precision. "Pretty close" is not good enough; all adjustments and all functions must be within the specified tolerances. Higher compression engines require better control of ignition advance and certain tests and adjustments of the distributor require more attention than commonly given.

In the past we have considered that breaker point spring tension required reasonably close adjustment because too much tension would result in excessive rubbing block wear and possible point bounce while too little spring tension might allow the points to float at high speeds. But now there is another important point that must be considered. Too much point spring tension may transmit a "flutter" to the movable breaker plate due to the excessive pressure required for the distributor cam lobe to open the points. When servicing distributors, make doubly sure that breaker point spring tension is adjusted to specifications.

In high compression engines the vacuum advance must retard instantly on acceleration in order to avoid detonation. Always be sure that the breaker plate action is free and smooth with no binding or sticking of the plate or linkage. Proper lubrication is absolutely essential.

On Delco-Remy distributors using the center-bearing breaker plate, both stabilizing spring tension and resistance to rotation should be

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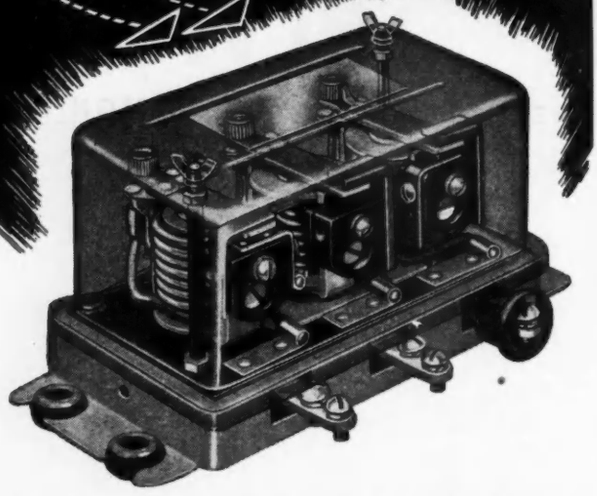
This HEAVY DUTY
Leece-Neville



SERVICE REGULATOR

CAN CUT COSTS ON YOUR FLEET

Figure it out for yourself... what does it cost you per hour when one of your vehicles has an electrical breakdown caused by the regulator?

Since the whole electrical system depends on the sensitive control of the regulator, doesn't it make sense to replace with something better?

The heavy-duty L-N Regulator is engineered and built to stand up and to protect the entire electrical system. Its double-contact design and rugged construction throughout insure longer, trouble-free life. If it ever does need servicing, parts are readily available and easily installed.

There is a Leece-Neville Heavy-Duty Service Regulator for any truck or bus, from 7 to 60 amps, 6 or 12 volt systems.

It will pay you to specify Leece-Neville Heavy Duty Service Regulators for replacement.

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Send me the complete story on cutting costs with L-N Regulators.

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Company _____

Address _____

City _____ State _____

# At Your Service

Continued from Page 9

tested and adjusted. Delco-Remy produces two types of these center-bearing breaker plates designated as "Type A" and "Type B" plates. The Type A breaker plate is designed primarily for use on "angle mounted" distributors while the Type B plate is for use on vertically mounted distributors.

On vertically mounted distributors it is possible to use less stabilizing spring tension and this in turn provides freer movement of the breaker plate. The Type A distributor requires 32 to 56 oz of stabilizing tension while the Type B breaker plate requires only 18 to 24 oz.

It should require not more than 20 oz of pull to rotate the Type A breaker plate and not more than 15 oz to rotate the Type B breaker plate.

The proper method of using the Delco-Remy breaker point gap and dwell specificaiton is to first adjust the points to the specified gap and then test the dwell to be sure it is within the specified range. If dwell is less than the specified minimum, after properly adjusting point gap, check for defective or misaligned breaker points or worn distributor cam lobes.

For more accurate readings on your Sun dwell meter, you should recalibrate the meter to compensate for distributor point resistance. This applies to the master distributor tester as well as when making dwell tests "on the vehicle."

The procedure is to first calibrate the meter to the set-line as usual and make the distributor point resistance test. The meter should read within the black bar at the right end of the scale. If not, make necessary corrections by tightening connections, cleaning or replacing the points.

When the meter reads within the black bar, indicating that point resistance is within normal tolerances then readjust the dwell regulator until the meter again reads on the set line. This will eliminate any error in dwell readings caused by point resistance.

Also, remember that excessive variation in dwell readings from idle speed up to 1750 rpm indicates wear in the distributor while excessive dwell variation above 1750 indicates high

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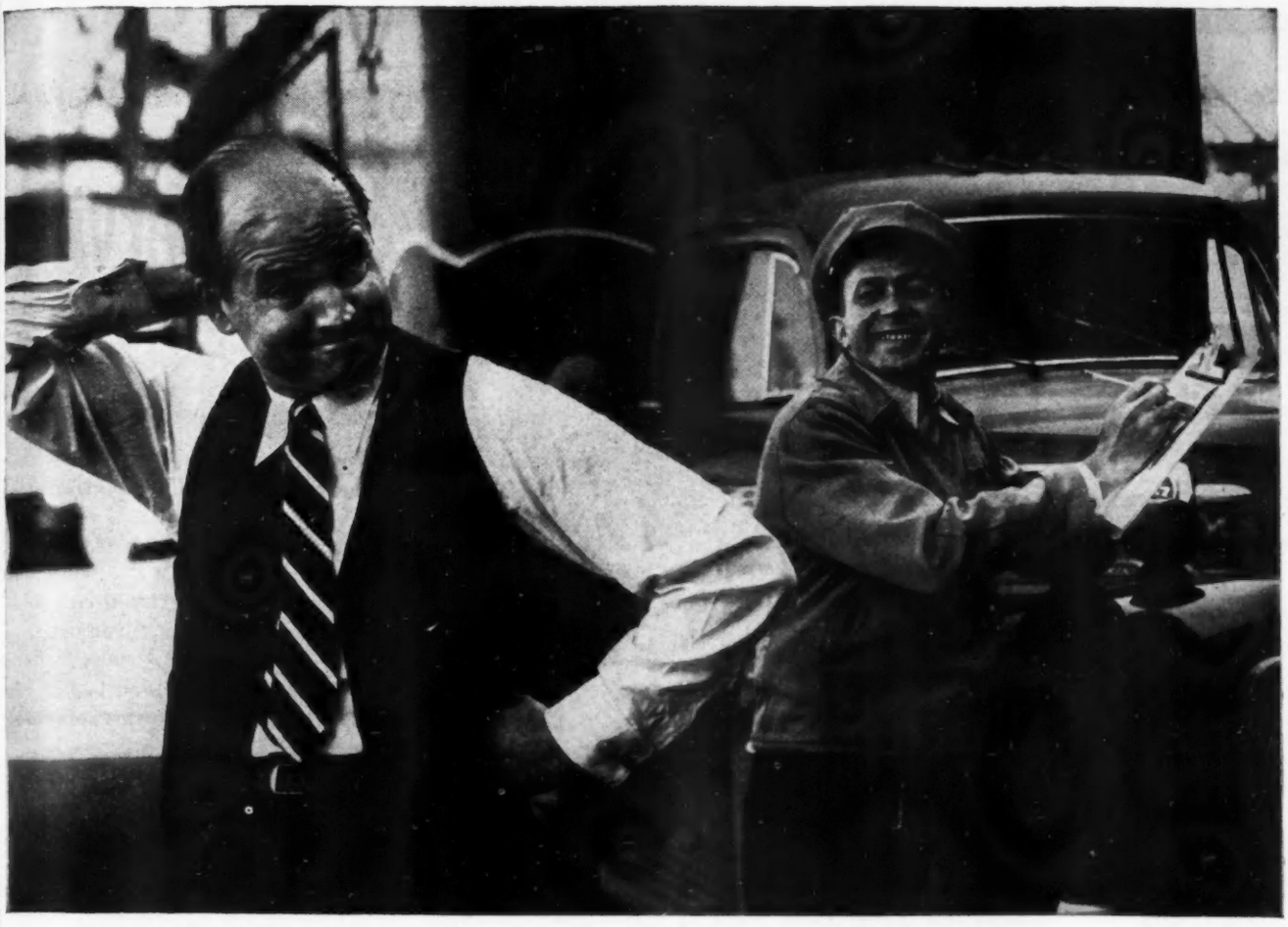

# I watched the pennies so closely—

## I missed the BIG PROFIT story!

I RUN a big fleet – know all the angles – but today I felt like the cub reporter who phoned his editor and complained: "No story! The celebrity I came to interview just jumped out the window!"

I'm bad as that kid—so absorbed in my AIRFOAM repair and replacement savings that I clean overlooked the BIG PROFIT story. It took my timekeeper to put me wise:

"Sure AIRFOAM saves money," he said. "Even after 150,000 miles and more,* not ONE of the full-depth AIRFOAM cushioned seats you specified in all new trucks needs repairs or replacement!

"But the BIG deal is the money AIRFOAM is *making* for you by helping our drivers keep cool, comfortable, relaxed—and on the beam as never before! Look at my time sheets, Boss—our boys are driving rings around the competition since you gave them the *chance* to do their best!"

* From actual on-the-job fleet records. If you'd like to see more of them, write Goodyear, Automotive Products Dept., Akron 16, Ohio.

**AIRFOAM** contains over half a MILLION air cushions to each cubic inch! That's why AIRFOAM cushioned seats "breathe" with every motion—stay cool and fresh and buoyantly comfortable for the life of the truck!

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THE NAME Bendix AVIATION CORPORATION ASSURES TROUBLE-FREE PERFORMANCE

Bendix* Electric Fuel Pump

Bendix* Folo-Thru Starter Drive

Stromberg* Carburetor


# CCJ At Your Service

Continued from Page 10

secondary or primary ignition circuit resistance. On Delco-Remy distributors, the manufacturer states the permissible dwell variation at ±3 degrees.

### Rear Axle Overhaul—IHC

CORRECT tooth bearing contact between ring gear and pinion must always be a foremost objective in rear axle overhaul. In working toward a correct gear setting, a modified tooth bearing contact of 62½ per cent is now recommended where severe service is encountered. The 80 per cent bearing contact called for in the past, while generally satisfactory in less severe service, is not suitable for today's average working loads and severe usage.

Anyone attempting to rebuild or adjust a differential should have a thorough understanding of gears and all the factors that affect them. It is important that full use be made of available tools, and gages (pinion setting gage, dial indicator and specifications). With reasonable care, a correct gear and pinion setting should be accomplished. Red lead or similar substance should always be used in conjunction with tools to verify the tooth pattern obtained with the tools. The use of the recommended gages will speed up the obtaining of a correct setting, but the paint impression method should always be employed for final checking.

When taking tooth impressions for setting a ring gear and pinion, the readings are usually taken on the drive side of the ring gear. There are, however, some instances where these readings are taken on the coast side of the gear. This is true for tandem axle units where the axles are driven from the coast side.

Other details to be noted at overhaul are as follows: Always prelubricate each part at time of assembly to insure that each wearing surface will be coated with gear oil at the time of initial operation. Use only those lubricants supplied by a reputable refinery. When filling the gear case check the vehicle lube chart for the correct quantity and type of lubricant. Make sure that no dirt gets into gear case or that gear oil becomes contaminated in any way. To assure complete lubrication after over-

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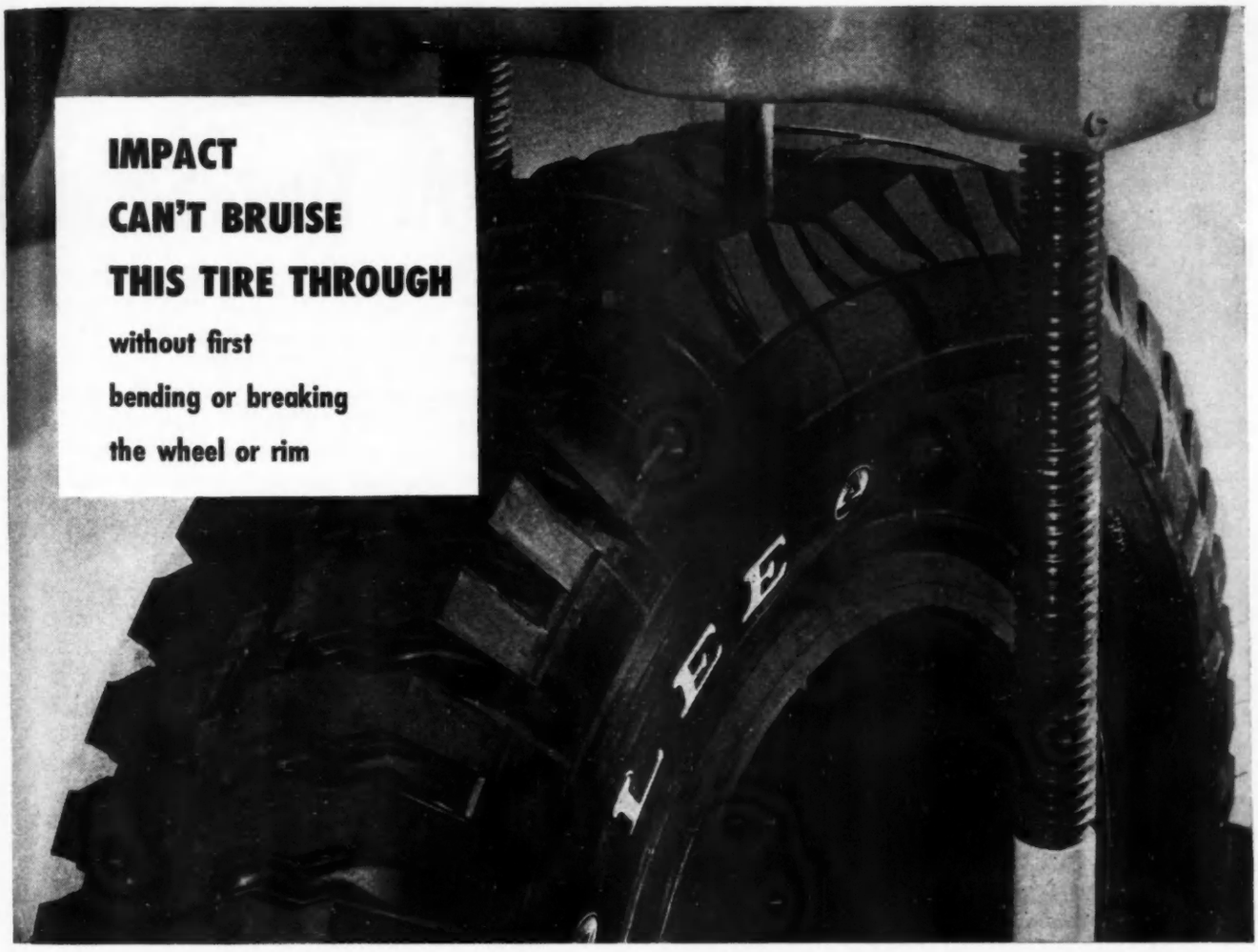


# NEW LEE SUPER DE LUXE DEEP-CLEAT TRUCK TIRE

**Extra-ply rating tire for logging, mining, quarrying . . . any service that demands brute strength and terrific resistance to chipping and tearing.**

**Brute-Strength Carcass provides super strength.** Here is the strongest tire Lee has ever produced. The new, improved carcass is built with Lee Double-Life Cord—a high-tenacity, low-stretch fabric that gives greatly increased resistance to bruises and blowouts; longer life for multiple recaps. Lubri-Cushions—thin single sheets of rubber between each ply—preserve carcass strength by preventing ply separation, equalize bruise strain over an entire impact area, and extend carcass life by lubricating plies for less internal heat.

**Flexlok Construction provides super resistance.** Flexlok, an exclusive new Lee adhesive, increases cord adhesion by 300% and makes cord separation from the rubber bond practically impossible. Flexlok makes the Lee Deep-Cleat stronger and more resistant to the violent flexing it must take in mining, logging and quarrying operations. Flexlok also reduces internal heat and tire growth.

**Cushion-Claw Tread provides super traction.** This extra flat tread is about 60% deeper than that of standard highway tires and is compounded for incredible resistance to chipping and tearing in rough, bruising travel over stumps and rocks. The cleats are all of equal length to prevent cupping or breaking off and are designed to be self-cleaning. A continuous center bar around the tire strengthens the cleats, gives the tire extra stability, prevents heel and toe action.

The Lee Deep-Cleat is also available in regular ply rating for use where the terrain does not require the maximum carcass strength of the extra-ply rating tire.

**SEND COUPON FOR ADDITIONAL INFORMATION**

LEE TIRES

**LEE RUBBER & TIRE CORPORATION**
**Conshohocken, Pa.**

Please send me your new folder describing the many advantages of the new Lee Super DeLuxe Deep-Cleat Truck Tire—strongest tire Lee has ever made.

Company.....

My name.....

Street.....

City.....Zone.....State.....

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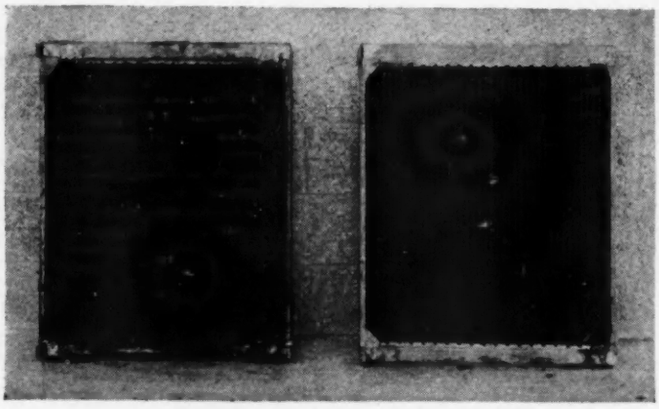

# Shop declogs radiators at 1/3 less former cost

### Reports better soldering surface also obtained with Oakite Stripper R-6

You can take it from a man who has been reconditioning radiators for a long time. Over the years this shop operator used many materials to boil out radiators—and was never fully satisfied.

Then the Oakite Man suggested using a material that had been doing a job for service shop operators the country over during the 1½ years it had been on the market. He pointed out that Oakite Stripper R-6 was proving effective not only in desludging the most stubbornly blocked cores, but also in stripping tough modern synthetic paints.

A short trial in the shop told the story—and many months experience has since confirmed it beyond question. Never had surfaces come from the boiling tank so clean and in such excellent condition for soldering and repainting. And records showed 33% saved on cost of materials formerly used.

*Proving that*... by calling in Oakite, you get cleaning *results* instead of just cleaning materials.

★ ★ ★

Look up the many money-saving garage and shop cleaning hints this booklet No. 4401 can show you. Write Oakite Products, Inc., 40B Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada


# CCJ At Your Service

Continued from Page 12

haul always jack up both rear wheels and run the axles for a short period at speeds equivalent to 25 to 30 mph. This will insure a "soaking in" of the lubricant before subjecting the differential to a load. Do not allow the wheel on one side to race faster than the wheel on the opposite side.

It is generally known that by operating a new or rebuilt axle at reduced speeds and loads through a breaking in period, axle life will be greatly increased. If possible, therefore, a rebuilt axle should be operated for a short while (at least 100 miles) with a 20 per cent reduction in maximum load and road speed. This will allow gearing to become polished or lapped in before absorbing a maximum load. This breaking in period may be likened to that given a new or rebuilt engine and similarly the benefits will be just as rewarding.

After the axle has been placed in service a continued vigilance in maintaining the correct level of oil in the gear case must be practiced. When checking the oil level be sure the vehicle is on level ground and allow vehicle to stand long enough for gear oil to cool. This will prevent an erroneous reading because of expansion or foaming. If necessary to add lubricant, be sure that it is of the identical type already in the axle. The initial drain and flush should occur soon afer the overhaul (before 10,000 miles of service).

### Exhaust Monitor Guides Shift

A THERMOSTATIC device, developed to warn the driver of a diesel truck when he should shift gears, has been built by Minneapolis-Honeywell Regulator Co. It consists of a coiled bimetal temperature-sensing element which is mounted in the exhaust stack or manifold, and a set of two warning lights installed in the truck cab. When the exhaust temperature goes above a pre-determined danger level (usually 600 to 700 deg. F) the bimetal sensing element closes a circuit; this automatically lights the red warning light. If, on the other hand, the engine is operated below a certain temperature (usually 400 to 500 deg. F) the amber light comes on.

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FLEET HI

# UP FRONT with CCJ

**FLEET HIGHLIGHTS OF THE MONTH AS REPORTED BY COMMERCIAL CAR JOURNAL**

**MR. EXECUTIVE** this month's meeting (July 11-14) of the governors of the 48 states at Lake George, N. Y., could be the turning point of the growing tangle involving trucks, ton-mile taxes, reciprocity and retaliation. This meeting could set the pattern for debate when most state legislatures meet come Jan. 1955. Two major suggestions will be in the spotlight. ATA proposes a return to traditional first and second structure taxes for interstate fleet operation, elimination of ton-mile and other third structure highway use taxes. It will ask the governors to permit fleet users to license their trucks in various states in proportion to their use of each state's highways and then pay fuel taxes to each state according to miles operated in that state. Mileage tax, suggested late in 1952 by the National Assn. of Tax Administrators (CCJ, Dec.'52-p. 31, Jan. '53-p. 62), is also likely to be discussed by the governors. Such a tax, reviewed and reapproved by the tax administrators at their meeting last month in Chicago, would be a "single structure" tax in that it would replace existing graduated registration fees, and fuel, weight-distance and gross receipts highway use taxes on interstate trucks. Instead, interstate trucks would pay each state for highway use at a rate per mile equal to highway use taxes paid by purely intrastate trucks.

**RECIPROCITY BARRIERS** were a special target of ATA's Executive Committee when it met last month. It endorsed the Ayres Resolution (HR 407 scheduled for House action late last month) calling for federal investigation of interstate trade barriers resulting from third structure taxes. It also passed a resolution asking that federal highway aid be denied states that divert highway funds or that impose third structure taxes on vehicles properly registered in another state.

**PIGGY-BACK** expansion by railroads proposing to haul their own or leased trailers at competitive motor carrier rates in rail-trailer service came to a halt the middle of last month. The ICC suspended until Jan. 15, 1955, tariffs filed by the Pennsylvania, Erie, Lackawanna, Nickel Plate and Baltimore & Ohio proposing such operation. (Further details appear on page 181, this issue.) ICC hearings on the tariff suspension will open July 27.

**WAR TALK** has been increasing, has some fleetmen wondering about probable controls. While intervention in Indo-China is not likely, further Communist aggression elsewhere could lead to direct military action. The Administration is reported to be ready—in the event of such emergency—to ask for a 90-day freeze on prices, wages, rents, credit and inventories.

# DETROIT DISPATCH

**BPR BRAKE STUDY WAS** reported on at SAE's Summer Meeting last month in Atlantic City. Need was shown for attention to brake build-up time. (See page 74, this issue.) Fruehauf has announced it will run tests to see if this lag time can be cut.

**"METRO-MATIC" TRANSMISSION HAS** been announced by International Harvester. It is a fully automatic shift for multi-stop delivery service. (Details on page 118, this issue.)

**STUDEBAKER-PACKARD CORP. IS** the new name if stockholders OK joining of Packard and Studebaker approved late last month by directors of both companies.

**DIAMOND T PRESIDENT,** C. A. Tilt, has turned down an offer to buy his family's stock holdings in the company at $20 a share. Market value at the time of the offer was $13.

**NEW TYPE SEALED BEAM HEADLAMPS CAN** be expected to appear on new cars and trucks about the middle of next year. Necessary approval by state legislatures meeting early in 1955 is expected.

**TUBELESS TIRES FOR** light trucks seem certain next year when passenger car makers adopt them. On larger trucks, tests by one maker showed that tubeless tires are more stable on wide base rims.

**STANDARD REAR LIGHT SPECS FOR** trucks are expected as a result of several studies now under way. Results probably will go to SAE Lighting com-

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# WASHINGTON RUNAROUND

**ICC HAS PROPOSED** that associations be banned from entering complaints or protests against existing or new rates, charges, fares, rules, regulations, practices or applications for operating rights. Action stems from charges that members are hiding behind associations in objecting to applications for operating rights. ATA's Executive Committee has expressed opposition to the proposal. Interested parties may submit written statements on the matter, docketed as Ex Parte 194, to the ICC before July 15.

**TRIP LEASING HEARINGS BEFORE** the Senate Commerce committee resumed late last month, just before ICC hearings on the same subject came to a close. Guessing was that the House-passed bill to bar the ICC from regulating trip leasing, HR 3203, would not get through the Senate in this session. Meanwhile, ATA's Regular Common Carrier Conference Board of Governors has voted to oppose passage of the bill.

**SOCIAL SECURITY INCREASE AS** proposed in HR 9366 was expected to pass. One result would be payment by employers of an added $12 per year for each employee earning as much as $4200.

**ICC'S POWER TO** extend temporary operating authority beyond 180 days was denied by a three-judge, federal court in Boston last month. The Commission has announced it will appeal the decision to the Supreme Court. About 400 motor carriers are affected.

**NEW DEFENSE TRANSPORT ADMINISTRATOR IS** ICC Commissioner Owen Clarke. He succeeds James K. Knudson, retiring from the ICC. John H. Winchell, chairman of the Colorado Public Utilities Commission, has been nominated to Knudson's place on the ICC.

**FEDERAL INVESTIGATION OF** alleged secret railroad subsidies to influence legislation punitive to competitive freight transportation by truck, air freight and waterways has been asked by the Independent Advisory Committee to the Trucking Industry (ACT). ACT Chairman Dave Beck delivered in person evidence supporting the charges to Attorney General Brownell.

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**ROGER M. KYES HAS** rejoined General Motors as a vice president, director and member of GM's Administration and Operations Policy committees. The former U. S. Deputy Secretary of Defense will be group executive in charge of GMC Truck & Coach, Dayton and Household Appliance divisions.

**STANDARD TRUCK WARRANTY MAY** be due for changes. Being considered are a proposal to cover all factory-installed equipment and a change in interpretation of policy adjustments.

**SYNTHETIC RUBBER PLANTS ARE** headed for private ownership. Government has received 74 bids for its 27 plants from 34 companies.

**ACT RECENTLY MERGED WITH** the Eastern Highway Transport Conference, an organization of truck users and supplies from 22 eastern states.

**TRAILERSHIP OPPONENTS WERE** scheduled to begin argument before the ICC on July 7. McLean Trucking Co., which proposes to operate at least four ships hauling 285 highway trailers each in Atlantic coastal service, finished its presentation of the case middle of last month.

**ATA FOUNDATION, THE** supplier-financed public relations coordinating organization for the trucking industry, was reported to have pledges coming from International Harvester, Trailmobile and General Tire for another round of funds. Fruehauf ($100,000) and Dayton Rubber ($25,000) have already made second commitments. Foundation's success is such that late last month a Committee of Railroad Suppliers was formed. Its purpose, according to announcement, is to tell the story of "railroad progress and railroad potential." Their initial advertising appeared as a full page in major newspapers on July 1.

# BUSINESS TRENDS

## First Quarter Truck Tonnage*

| Region | First Quarter 1954 | First Quarter 1953 | Per Cent Change |
|---|---|---|---|
| New England | 2,979 | 3,120 | − 4.5 |
| Middle Atlantic | 9,593 | 10,257 | − 6.5 |
| Central | 17,339 | 19,649 | −11.8 |
| Southern | 5,660 | 5,592 | + 1.2 |
| Northwestern | 2,517 | 2,567 | − 1.9 |
| Middlewestern | 3,215 | 3,107 | + 3.5 |
| Southwestern | 3,688 | 3,489 | + 5.7 |
| Rocky Mountain | 1,706 | 1,569 | + 8.8 |
| Pacific | 5,152 | 4,895 | + 5.2 |
| United States | 51,847 | 54,243 | − 4.4 |

* In thousands of tons.

Reflecting the national business lag, first quarter tonnage for 1954 was 4.4 per cent less than first quarter 1953 reports ATA's Research Dept. It was still the second largest first quarter on record.

## IN THIS ISSUE . . .


**BRAKES** Comment and data from the Bureau of Public Roads brake studies by F. William Petring of BPR's Highway Transport Research Branch shows how maintenance improves brake performance . . . page 74.

**FLEET FACILITIES** Reinforced concrete arches provide 73,350 sq ft of unrestricted floor space for garaging, servicing 200 London Transport buses . . . page 68. Local cartage fleet's new 75-truck terminal has compact service layout . . page 84.

**COST CONTROL** Accident claim costs affect chances of agreeing on a "fair value" settlement . . . page 78. Theft prevention can be a money saver . . . page 90.

**FUELS** LP gas at 12¢ per gal saves 1½¢ per mile, has eliminated road failures for 26 months . . . page 80.

**NEW EQUIPMENT** German Deutz diesel engines come in 4 and 6-cyl in-line and 6, 8 and 12-cyl V models . . . page 89. Available's trailer jockey has power steering . . . page 92. Roosa-Master fuel injection pump for diesels uses single cylinder with opposed plunger . . . page 94.

**INDUSTRY NEWS** This month's news highlights include a complete summary of railroad "piggy-back" plans . . . page 146.

# The Road Ahead

**HIGHWAY BUILDING COSTS** are dropping according to the Bureau of Public Roads and a spot check of 26 states by the Wall Street Journal. Highway officials checked generally concur that the savings will be put into more highways. In addition to lower cost, road building outlays are up dollarwise. BPR estimates 1954's total road bill at $6 billion compared to $5.4 billion for 1953, a 10 per cent increase BPR's composite mile cost index—with 1946 as base year—stood at 127.7 for the first three months of this year as compared to 139.4 for the first quarter 1953.

**PLASTIC TRUCK BODIES WILL BE** easy to find in Kansas City. A bakery firm there has taken delivery of 100 of the fiber-glass reinforced units. They were made locally. Plastic milk tank truck used by Dairylea (CCJ, Dec. '53, pp. 138-142) ran-up five months of winter service without a layup for repairs. Six more are on order.

**WASHO ROAD TEST HAS** entered its final stage, that of compiling the data gathered into a final report. There's a long way to go. Even after the report is written, approval must be obtained from the Reviewing, Executive and Advisory committees. Meanwhile, fleetmen were urged to be on the lookout for distorted anti-truck propaganda supposedly based on the WASHO Road Test. Several examples of wrongful use of test data turned-up after the Maryland Road Test, were easily proved false but only after they had given the public incorrect impressions.

**OHIO'S AXLE-MILE TAX WILL** only bring in about $12 million this year at the present rate. It was originally intended to produce $20 million a year revenue. At the same time as Ohio truckers are warming-up a campaign seeking repeal of the levy, Governor Lausche says he will ask the legislature to make changes in the tax to correct "bugs that were manifested after the law became operative."

**SELECTIVE RATE CUTS BY** the railroads still are being fought by motor carriers. For example: 1. ICC hearings were scheduled for July 6 on reduced rail rates on iron and steel in Official and Eastern territory as a result of motor carrier complaint. 2. Last month, railroad attorneys told the ICC they should be allowed to cut manufactured tobacco rates but motor carriers should have a floor placed under their rates. In Alabama, the state's Public Service Commission has scheduled hearings starting Aug. 2 following a proposal by the railroads to cut petroleum product rates. Noting the serious situation, ATA's Regular Route Common Carrier Board of Governors has appointed three working groups with the aim of finding a "sound and firm rate policy."

**PRODUCTION DATA FOR 1954** continues to lag behind that of 1953 with the exception of domestic bus factory sales. In this category, sales were 348 units in April this year as compared to 141 in April, 1953. Data for April and the first four months of 1954 and 1953 are tabulated below:

| In thousands of units, except bus sales are in actual numbers | New Truck Registrations | | Truck Factory Sales—Domestic | | Truck Trailer Shipments | | Bus Factory Sales—Domestic | | Truck and Bus Tires | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Replacement Shipments | | Original Equip. Shipments | | Inventory End of April |
| | April | 4 Months | April | 4 Months | April | 4 Months | April | 4 Months | April | 4 Months | April | 4 Months | |
| 1954 | 75.5 | 289.5 | 79.4 | 329.6 | 4.5 | 18.2 | 348 | 1317 | 607.4 | 2375.0 | 345.8 | 1352.9 | 2951.1 |
| 1953 | 91.1 | 312.0 | 114.8 | 420.9 | 7.8 | 26.2 | 141 | 737 | 735.9 | 3153.3 | 507.8 | 1978.0 | 3206.6 |

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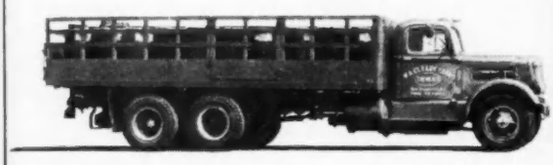
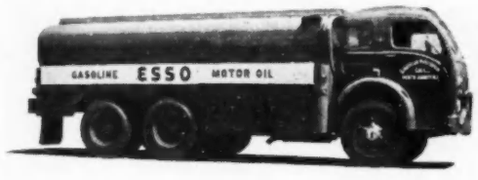
**WHITE MODEL WB28 with Trucktor Model HR Trailing Axle, 11.00 x 20 tires, mechanical air brakes.**



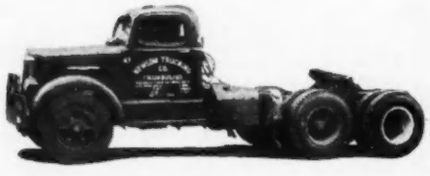
**WHITE MODEL WC26 with Trucktor Model HLR Trailing Axle, 10.00 x 20 tires, mechanical air brakes.**




**WHITE MODEL 302662 with Trucktor Model HR Trailing Axle, 11.00 x 20 tires, mechanical air brakes.**

**WHITE MODEL WC28BF with Trucktor Model HLR Trailing Axle, 10.00 x 20 tires, mechanical air brakes.**

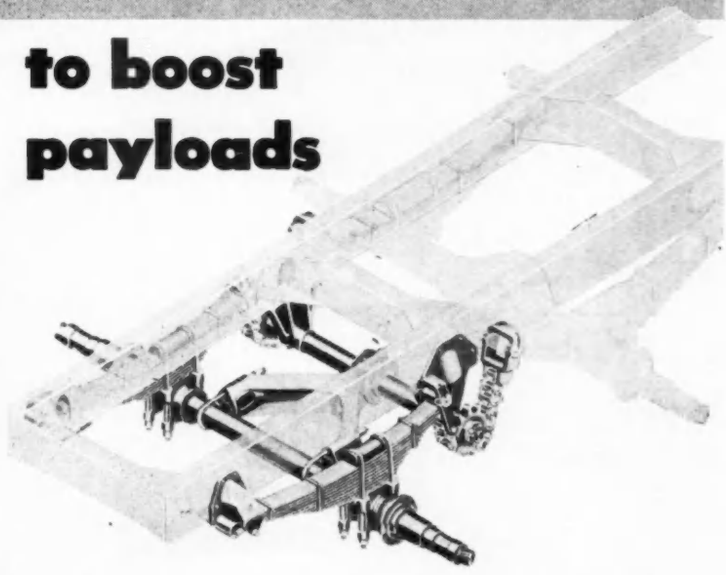
**WHITE MODEL WA22T with Trucktor Model HLR Trailing Axle, 10.00 x 20 tires, mechanical air brakes.**



**WHITE MODEL 302662 with Trucktor Model HLR Trailing Axle, 10.00 x 20 tires, mechanical air brakes.**

# Many *White* Truck Owners use Trucktor® TRAILING AXLES

## to boost payloads



For the smoothest ride . . . best protection for driver, truck and cargo . . . low maintenance costs and long service life . . . get Trucktor's unique "Truck-Mated" Trailing Axle. A rubber-mounted "yoke" tows the axle—keeps wheels aligned and on the ground. The "Chain-and-Sprocket Load Divider" provides maximum flexibility. Full-floating springs, rubber-mounted at the axle, carry *only* the load—take no brake reaction. Six-point frame support protects the frame . . . reduces side sway . . . supports the frame *behind* the last axle.

**TRUCKTOR *Detachable* Chain-and-Sprocket 4-WHEEL DRIVE**

**Makes tire chains unnecessary. When extra traction is needed, sprocket chains are slipped over sprockets and pinned. Attached and detached quickly, simply, without removing wheels (in picture, wheel removed to show construction).**

**Trucktor Trailing Axles are available for most truck makes and models. Call your Truck Dealer, Trucktor Distributor, or write direct.**

**THE TRUCKTOR CORPORATION, Route 22, Mountainside, N. J.**

**Trailing Axles for 6-Wheeler Conversions. Single and Tandem-Axle Trailer Assemblies with Steel Springs or General Air Springs.**

*Job-Fitted*

**IN DESIGN AND CONVENIENCE**

**Here is a sturdy, medium priced pedestal seat that will 'fill the bill' for panel trucks, and many other types of mobile equipment.**

**Contour seat padded with foam rubber, covered with genuine black flexible leather. Manual vertical adjustment. Base of pedestal will be engineered for adaptation to your particular application.**

**Write today for a Milsco cushion seat catalog showing the complete line of Milsco seating.**

***Sold only to manufacturers of original equipment.***

Milsco MILWAUKEE

**MILSCO MANUFACTURING CO.**
Dept. T, 2738 N. 33rd St., Milwaukee 45, Wis.


# DATES *and* DOINGS

## JULY

9-10—South Carolina Motor Truck Assn., Annual Convention, Ocean Forest Hotel, Myrtle Beach, S. C.

17-18—Wisconsin Truckers Safety Council, Annual Truck Roadeo, Green Bay, Wis.

22-24—Truck-Trailer Manufacturers Assn., Summer Meeting, Edgewater Beach Hotel, Chicago, Ill.

## AUGUST

1-3—Movers' Conference of America, American Trucking Assns., Annual Assembly, Hotel Statler, Boston, Mass.

5-7—Michigan Trucking Assn., Annual Truck Roadeo, Lansing Capital Airport, Lansing, Mich.

16-18—Society of Automotive Engineers, International West Coast Meeting, Hotel Statler, Los Angeles, Cal.

19-21—North Dakota Motor Carriers Assn., Annual Convention, Prince Hotel, Bismarck, N. D.

## SEPTEMBER

4-6—Mississippi Motor Transport Assn., Annual Convention, Hotel Buena Vista, Biloxi, Miss.

8-11—National Truck Roadeo, American Trucking Assns., International Amphitheater-Sherman Hotel, Chicago, Ill.

9-11—Indiana Motor Truck Assn., Annual Convention, French Lick Springs Hotel, French Lick, Ind.

9-11—Kansas Motor Carriers Assn., Annual Convention, Hotel Broadview, Wichita, Kan.

9-11—Virginia Highway Users Assn., Annual Convention, The Chamberlin Hotel, Old Point Comfort, Va.

13-14—Wisconsin Motor Carriers Assn., Annual Convention, Lake Lawn Resort, Lake Delavan, Wis.

14-18—National Assn. of Motor Bus Operators, Chicago, Ill.

18—Massachusetts Motor Truck Assn., Annual Meeting, Somerset Hotel, Boston, Mass.

18-19—Pennsylvania Motor Truck Assn., Fall Meeting, Pocono Manor Inn, Pocono Manor, Pa.

20-22—Truck Body and Equipment Assn., Annual Meeting and Exposition, Hotel Statler, Buffalo, N. Y.

22-23—Central Motor Freight Assn., Annual Meeting, Palmer House, Chicago, Ill.

27-30—American Transit Assn., Annual Meeting, William Penn Hotel, Pittsburgh, Pa.

29-Oct. 2—Local Cartage National Conference, Annual Convention, Hotel Warwick, Philadelphia, Pa.

## OCTOBER

7-9—Idaho Motor Transport Assn., Annual Meeting, Shore Lodge, McCall, Idaho.

8-9—North Carolina Motor Carriers Assn., Annual Convention, Hotel Carolina, Pinehurst, N. C.

18-20—Society of Automotive Engineers, National Transportation Meeting, Sheraton-Plaza Hotel, Boston, Mass.

18-22—National Safety Council, Annual Safety Congress and Exposition (Commercial Vehicle and Transit Safety Sessions, La Salle Hotel), Chicago, Ill.

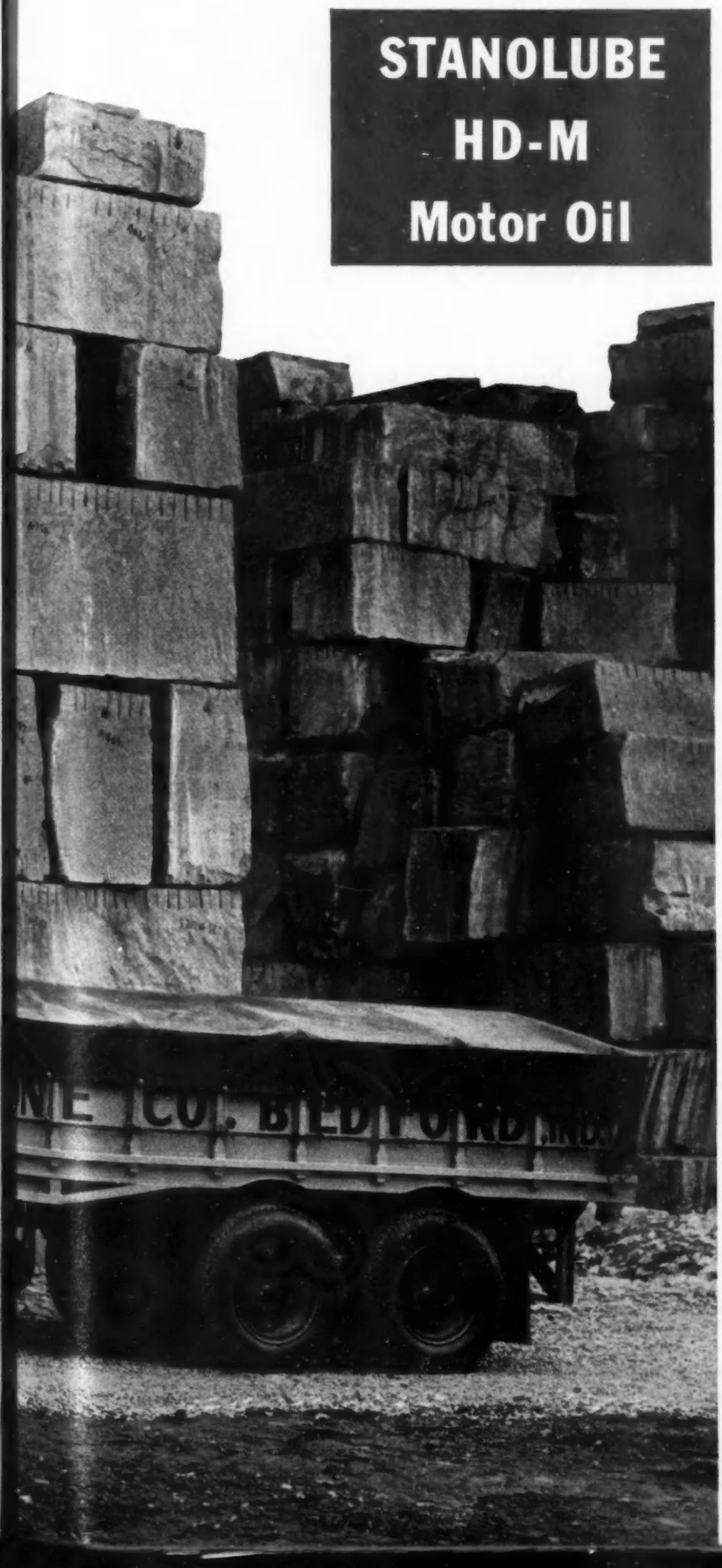
25-27—National Lubricating Grease Institute, Annual Meeting, Mark Hopkins Hotel, San Francisco, Cal.

25-29—American Trucking Assns., Annual Convention, Waldorf-Astoria Hotel, New York, N. Y.

26-27—Society of Automotive Engineers, National Diesel Engine Meeting, Hotel Statler, Cleveland, Ohio.

27-29—American Society of Body Engineers, Annual Technical Convention, Rackham Memorial Bldg., Detroit, Mich.

# per month with lowered maintenance costs




■ Heavy schedules and heavy loads are all in a day's work with the Ingalls Stone Company of Bedford, Indiana. Each week they deliver "mountains" of this famous stone to their customers — some located as far away as Texas. Monthly trips average 10,000 miles per truck. Trouble-free lubrication is an important factor.

When the company initiated its present preventive maintenance program a Standard Oil Engineer was called in. He supplied them with lubrication recommendations, comparable operating figures and made oil and filter change recommendations. He also advised a switch to STANOLUBE HD-M on all the company's units. Despite continuous operation of equipment, severe loads and high engine speeds, STANOLUBE HD-M has kept engines clean and protected against wear. There has been no downtime due to faulty lubrication. Thanks to good maintenance practices and the use of STANOLUBE HD-M, operating costs have been lowered — and kept low — and the "mountains" of stone have been delivered on time.

STANOLUBE HD-M is Standard Oil's new and better heavy-duty oil. It combines more effective detergent-dispersant action with greater oxidation stability. Your nearest Standard Oil office and warehouse stocks a complete line of Standard quality fuels and lubricants for fast, local delivery. Here, too, is headquarters for your Standard Oil Automotive Engineer. Call him today. Or write: Standard Oil Company (Indiana), 910 S. Michigan Avenue, Chicago 80, Illinois.

STANDARD

**STANDARD OIL COMPANY** *(Indiana)*

# Laugh it off!

**Forklift Operator: "I can't sleep nights."**

**Freight Packer: "Have you tried whiskey?"**

**Forklift Operator: "Yes, and that's why I can't sleep nights. I go home tipsy and my wife won't let me in."**

CCJ

*"Yes, this is the game warden. What can I do for you?"*

*"Thank goodness, I have the right person at last. I'm giving a birthday party and I wondered what games would be good for the children."*

CCJ

The retired sparkplug manufacturer never suffered with a sense of false modesty. He always claimed he built the best sparkplugs that could be found for truck or car. Likewise, he claimed he was the best lover, best golfer, best shot, etc. One day on a duck hunt he spied a lone duck flying overhead. Taking careful aim, he fired —but the bird sailed on undisturbed toward the horizon. The sparkplug tycoon watched in shocked silence, then slamming his gun to the ground he cried out, "Fly on, you crazy blankety-blank duck. Fly on with your durned heart shot out!"

CCJ

**Mrs. President: "Why, honey, I could type rings around the favorite blonde secretary you're always raving about. In my day I was really a bird of a stenographer.**

**Fleety-Fleet President: "Yeah, but just a one fingered one. Sort of an Underwood pecker."**

CCJ

The office honeymooners were walking arm in arm along the beach. Inspired by the occasion, he exclaimed, "Roll on, thou deep and dark blue ocean, roll on." His bride gazed at the ocean for a while, then exclaimed, "Oh Herman, you're wonderful. It's doing it."

*The first gal he saw after leaving the army was Bucktooth Bertha, Fleety-Fleet's Tracing Clerk.*

*"Hiya, Beautiful!" he said with a grin.*

*"I know why you're calling me that," replied Bucktooth Bertha. "It's because I've just spent six hours in a beauty parlor."*

*"No," the discharged veteran countered. "It's because I spent six months in Korea."*

CCJ

Dopey Dockman: "My gal has two of the prettiest legs in the world."

Frisky Freight Checker: "How do you know?"

Dopey Dockman: "I counted 'em."

CCJ

**City Delivery Driver: "Darling, let's pull over and park."**

**Luscious Lovey-Dovey: "Well, parking is okay. But there's just one thing I want to tell you before you go any further . . . Don't go any further."**

*"Cici Jay"*

**"Frankly, I'm not a bit interested in what you have behind your back!"**

**Freight Loader: "Charlie, last night at the party your sister promised to become my wife. Can you forgive me for taking her away?"**

**Freight Checker: "Shucks, boy, no apologies are in order. That's what the party was for."**

CCJ

*"This is daddy's den," said Fleety-Fleet president's little daughter. "Does your daddy have a den?"*

*"No, he just growls all over the house."*

CCJ

The Greasemonkey called to the bartender, "Give this lady a drink." She ordered champagne. He took beer. There were several rounds of drinks and each time they both took the same. Finally, the Greasemonkey said, "You look like a real nice girl. How come you keep ordering champagne when you know it's so expensive?" She said, "When I drink champagne, I have the same dream. I dream of a handsome man showering me with jewels and riches and carrying me off to a beautiful love nest. On the other hand, when I drink beer, all I do is burp."

CCJ

**New Groom: "What are you thinking about, darling?"**

**New Bride: "The same thing you are, dear."**

**N.G.: "Good. I'll race you to the refrigerator."**

CCJ

Little Percy's mother took him to school on the first day and gave the teacher a long list of instructions on how to take care of Percy. "He's such a sensitive child," she gushed. "When he's naughty, you mustn't punish him. Just slap the boy next to him. That will frighten him."

**Resume Work**

# THE DOUBLE REDUCTION REAR

## An Autocar Invention

Autocar evolved the double reduction principle in rear axle construction. The patent is dated 1902.

Instead of transmitting the engine power to the driving axles through one pinion and gear, Autocar utilizes two pinions and two gears. Result: rear ends of greater strength and more power.

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3G

# CC BULLETIN BOARD

DRIVERS • MECHANICS • SAFETY MEN *Please Note!*

## FIRST AID—FIRST

Safety is first—but when accidents happen, be sure to get first aid promptly. Many's the mechanic who realized too late that it wasn't silly to take care of minor cuts and scratches. Those boys have some imposing hospital bills to jog their memories.

You don't often win an argument with infection, and ironically enough it's often the insignificant wounds that complicate the details. Penicillin may save your arm if you neglect it, but it won't eliminate the pain or the expense of complications that might develop. And germs have no respect for strong men.

Your department has a first aid kit—or your boss will send you to a doctor. If you insist, do it yourself. Wash the wound carefully, use a disinfectant, dress it to keep out further dirt and then take care of it until it's healed. However, a pretty nurse can always do it better.

Smashed fingers, torn ligaments, eye injuries nearly always require expert medical attention. Don't take a chance. You're going to need your digits and your muscles and your eyes for a long time yet. And wheel chairs are most unpopular these days.

Best thing to do, of course, is to take better aim with the hammer, or stand out of the way of the jack handle, or quit leaning on a wrench that way. But if you do get in the way of foreign objects, head for the bandage banker, brother, and take a second to get first aid!

CLIP AND POST ON YOUR OWN BULLETIN BOARD —— REPRINTS AVAILABLE AT NOMINAL COST

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Study the many multi-stop design features at the right. Talk to owners of INTERNATIONAL Trucks with METRO bodies. Listen to the enthusiasm of their drivers. Ask your INTERNATIONAL Dealer or Branch for a demonstration today. Time payments arranged.

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**More payload space.** Eight body sizes, two body styles—standard or flatback. Four body lengths—7¾, 9½, 10½, and 12-foot. Increased capacities range from 243 to 392 cubic feet.

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**Lower operating cost.** New downdraft carburetion for greater fuel economy. New cushioned disc clutch for longer life, smoother operation.

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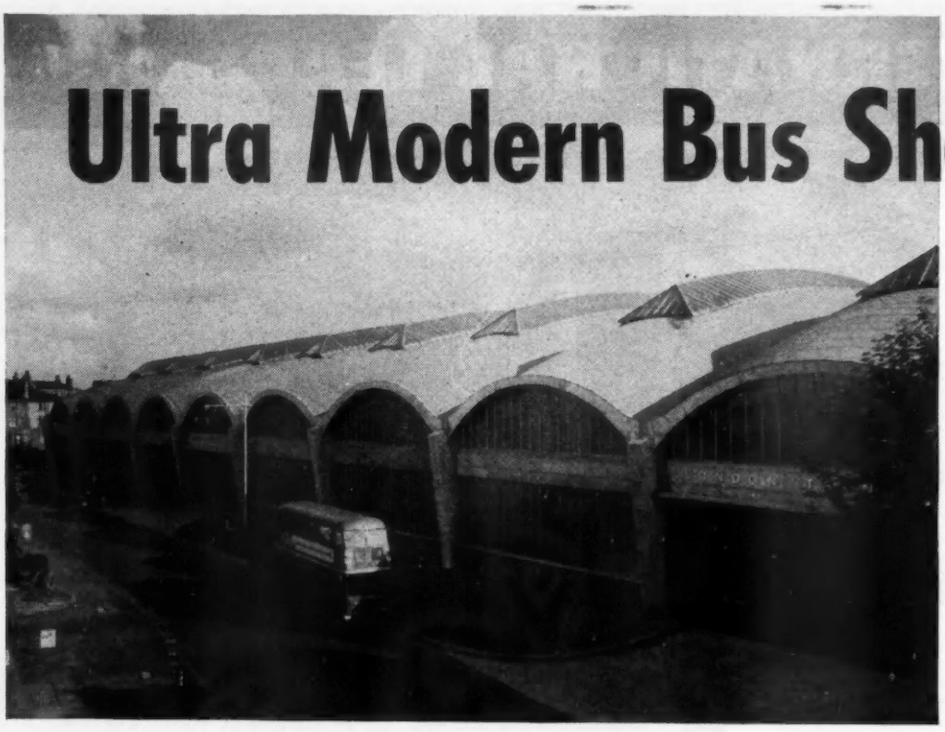
*"Standard of the Highway"*

CLIP AND POST ON YOUR OWN BULLETIN BOARD — REPRINTS AVAILABLE AT NOMINAL COST

# Ultra Modern Bus Shop—



**Reinforced concrete arches give unrestricted space for indoor parking**

**Way back in September, 1949, Commercial Car Journal published a story on "the world's largest bus fleet." Facilities then were complete but not so elaborate as this new shop at Stockwell. The London transport Executive—the fleet's official name—serves 2000 square miles, uses 7100 buses and 2600 trolleys, carries 12,000,000 passengers a day, employs 97,000 people. That's big operation . . . The Editors.**

REPRESENTING one of the motor transport garages constructed as part of the recently completed scheme to replace London's remaining trolleys by buses, the new London Transport garage at Stockwell is unique architecturally and embodies a number of interesting features.

Recently brought into full use, the new garage provides covered parking space for 200 buses, together with all necessary facilities for inspection, fueling, maintenance and repair work, operating offices, staff rooms, cafeteria, etc.

Bounded by two wide roads and only a short distance from an important intersection of main roads, the site is well suited to bus operation, and covers an area once occupied by large houses, but largely cleared by enemy action during the war.

### One Large Garage

The need for maximum unrestricted floor space led to the adoption of a design basically of one large garage, constructed in reinforced concrete arches to avoid the necessity for intermediate supports. Offices and staff rooms have been accommodated in a separate block.

With refueling and servicing islands immediately inside the garage entrance and washing machines placed just beyond the islands, the parking area is at the extreme north of the building, while the docking pits and repair shops are along the east-west axis to the south. Thus the main repair pits are clear of the parking area and can be enclosed by folding screens.

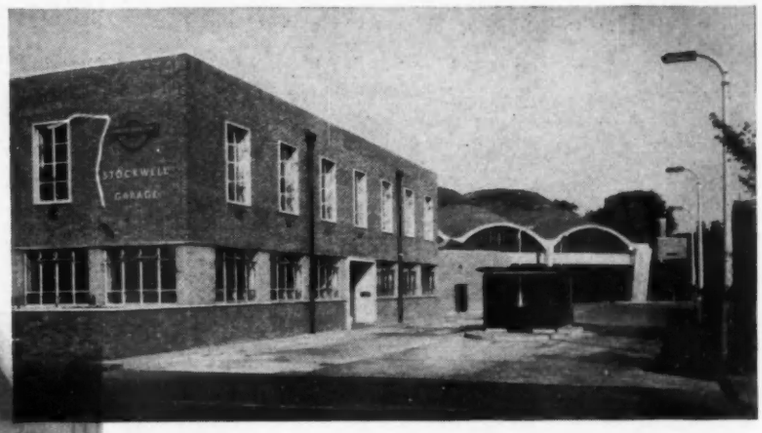
The main building is 392 ft long and is constructed of reinforced concrete arched ribs spanning 194 ft, connected by arched vaults spanning 42 ft—to give nine bays and an uninterrupted floor space of 73,350 sq ft. The building seems likely to take its place among the finest contemporary examples of the use of reinforced concrete as a structural medium.

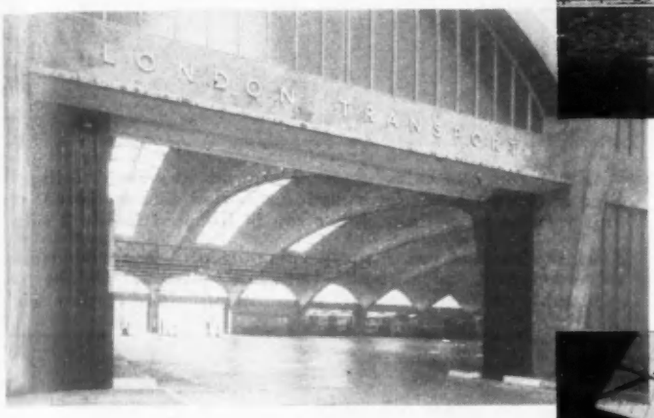
### Continuous-Beam Lights

Artificial lighting consists of fluorescent continuous-beam side fittings which follow the arch of the main ribs.

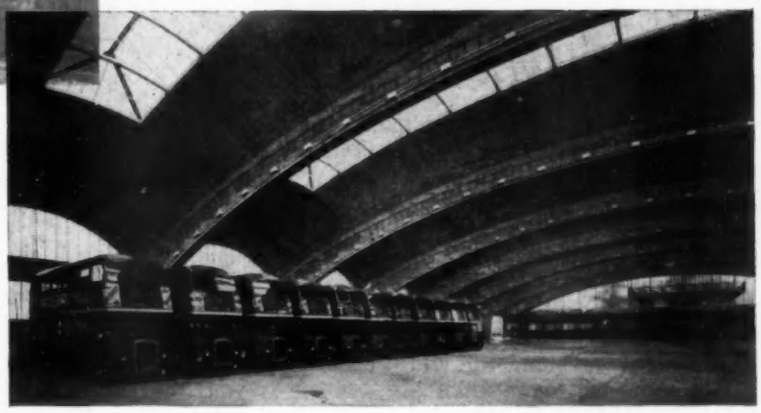
Finishes generally were selected for their hard-wearing qualities and economy in maintenance. In the garage and docking areas

# of London




Interior and exterior views of London Transport's new Stockwell garage give an idea of the 194-ft reinforced concrete arches that provide unrestricted floor space of 73,350 sq ft—space to garage and service 200 buses. Lighting is continuous-beam fluorescent that follows arch of main ribs, shown below



## and servicing of 200 buses

By John Grindrod

floors are of granolithic or reinforced concrete slabs. Around the parking area is a 5 ft 6 in. high rendered dado painted with an oil and water resisting rubber-based paint.

### Hot Water Heat

The heating, which is thermostatically controlled, is by low-pressure hot water circulated by pumps from the boiler house. Automatically stoked boilers are installed. In the docking area are radiant panels in the ceiling. The pits are individually warmed by heating coils.

Fumes from bus engines are extracted from the pits through underground pipes and exhausted to the open air by fans. A separate exhaust system takes care of fumes from the battery charging.

### Bus Washing Equipment

The bus washing equipment consists of three washing machines for sides and back and a roof washing machine.

As used for the sides, each washer unit comprises a roof-suspended, light-weight alloy framework into which are fitted rotating brushes and water sprays along the two sides and back. The frame fits around the bus and as the machine operates it travels down the bus and then back again to the roof of the garage. Operated by push buttons, the machine is guided over the vehicle without causing damage to bodywork by specially designed guide rollers, while the location of the vehicle in the correct longitudinal position for washing is achieved by means of a light ray operated photo-electric cell.

The machine is suspended from the garage roof at eight points by 5/16-in. steel wire rope. The raising and lowering operation is effected by means of a sprocket wheel and chain, the latter being fastened to one pair of the main hoist ropes.

Using approximately 35 gal of water per vehicle washed, the machine removes all the dirt on its downward journey over the bus, giving a further wash and final rinse on its upward journey. The complete operation takes less than two minutes. Capable of being operated by one man, it is a time and labor saver, and, being suspended from the roof, does not take up valuable floor space.

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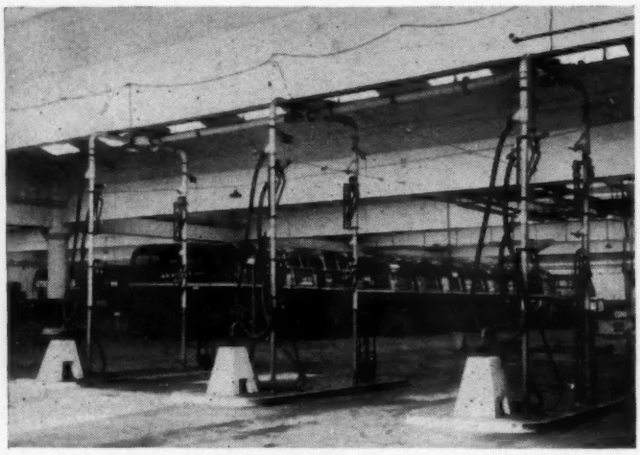
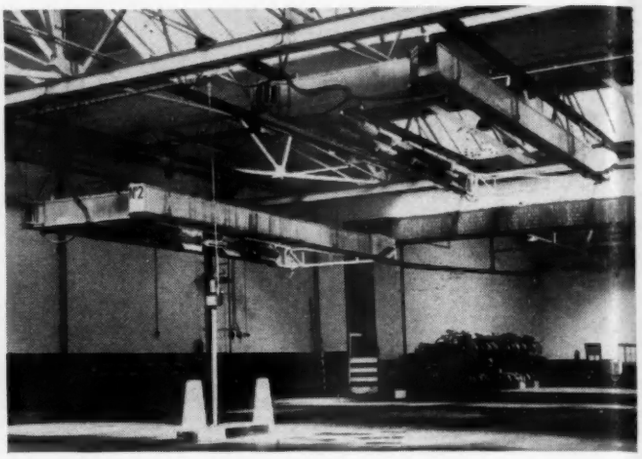


First stop inside garage entrance are refueling islands. At same time, buses are cleaned inside by pulling 2-in. vacuum hose through upper and lower windows of vehicle



Washers for bus sides descend around bus from ceiling. Dirt is removed on downward scrub and bus is rinsed as unit returns to ceiling. Job often is finished inside 2 min

Roof washer has water spray in front of brushes that revolve opposite to direction of bus's travel. Height is adjustable through use of a counterweighted pulley rig

# Ultra Modern Bus Shop . . .

Continued from Page 69

### Roof Washer

The roof washer carries revolving brushes covering the width of the vehicle roof and so disposed as to follow the transverse roof contour. The water spray is arranged to soak the vehicle roof before it passes under the brush. The whole equipment, with its water splash guard, is mounted in a skeleton metal frame, pivoted in trunnions, and is secured to the garage roof members.

The small angular displacement of the broom about the trunnions is obtained by means of pulleys and a counterweight. It enables vehicle roofs of slightly differing heights to be cleaned. The bus or coach is driven slowly under the washer, the brushes of which revolve at speed against the direction of travel of the vehicle. Operation needs only one-man control.

### Vacuum Cleaner

Designed so that the cleaning operation is performed in the buses at the same time as the refueling operation, immediately the buses enter the depot and while they are stationary at the fueling islands, the interior vacuum cleaning system makes use of flexible hoses which are pulled through the window openings of the upper and lower saloons. Two-inch bore flexible hose is used for this operation, and, on completion of the cleaning of the saloons, the hose is pushed back into position outside the buses where it is held on specially designed hinged brackets fitted with rollers in such a manner that the suction nozzles are positioned at a convenient distance for handling by the cleaners inside the buses. This feature eliminates, so far as is practicable, the manual labor normally experienced when dealing with heavy hose. Both hose and brackets are fitted to the two stand pipes on each of the three fueling islands.

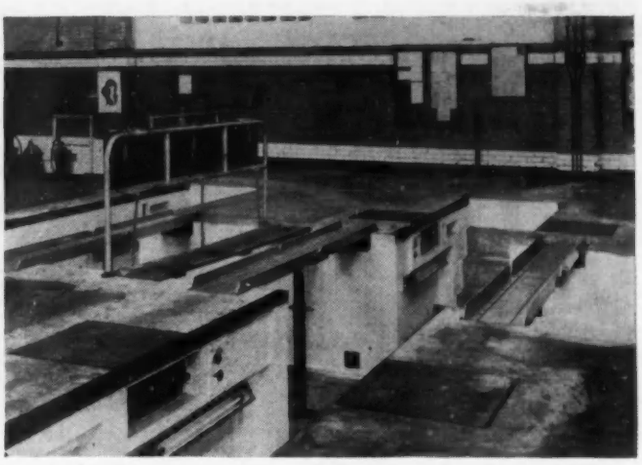
On the three islands, a total of 12 operating hoses are available, of which any eight can be used simultaneously. It is possible, therefore, for three buses to be cleaned at the same time during busy periods. With experience in operation, the time required to clean a bus is in the region of four minutes.

The standpipes are connected to an overhead conveyance pipeline. This line terminates at a separation unit which is installed in a plant room adjoining the depot.

### Separation Unit

The separation unit includes a refuse collector having a storage capacity sufficient to hold the refuse removed from the buses during the cleaning operation that is carried out during the night as the buses return to the depot.

Three pits are included and each is equipped with four independent built-in jacks with 12-in. lift. Smooth sides reduce chances of getting toes smashed or fingers caught



Bridged connecting pit speeds work. Bridges can be lowered from pit. Valve knobs in foreground control jacks. Fluorescent lights and white tile produce maximum light

Wheels can be held clear of the ground for quick removal by raising the vehicle with the jacks, holding it up with a cover board and blocks, then lowering the jacks

Below the refuse collector is an incinerator into which all the refuse is deposited daily, the transfer from the hopper being arranged through a hinged and telescopic discharge chute which engages with the charging door of the incinerator. This arrangement simplifies the disposal problem of unhygienic refuse.

### Lifts and Equipment

A 10-ton single post hydraulic lift enables complete vehicles to be raised while their undersides are steam cleaned by jets from a gas-fired steam cleaner. Three repair pits incorporate built-in hydraulic pit jacks, each installation comprising four independently operated jacks with 12-in. lift.

The refueling installation comprises six vertical cylindrical tanks each of 5000 gal capacity, a high lift pump and a recording meter. The engine oil installation comprises a pumping unit and dispenser and meter. Used oil from the docking area is gravity fed to an adjacent underground tank, whence it is transferred by a float-controlled, electrically operated pumping system to storage tanks.

### Shop Equipment

Included in the shop equipment are a fuel pump testing machine, a brake shoe re-lining machine, an engine lathe, drilling machines, grinders, and a mobile pit jack. Miscellaneous equipment includes a gasoline-driven mechanical floor sweeper, mobile jib crane, a coppersmith's hearth, a coachmaker's power-driven sandstone, welding equipment and grease pumps.

### Vehicle Pits

New type docking pits are particularly useful for maintenance work on side-engined and underfloor-engined vehicles as well as on the more conventional kinds. Three of these pits, one of whose principal features is a central communicating trench, have been installed. Each pit is equipped with four independent built-in jacks with 12-in. lifts.

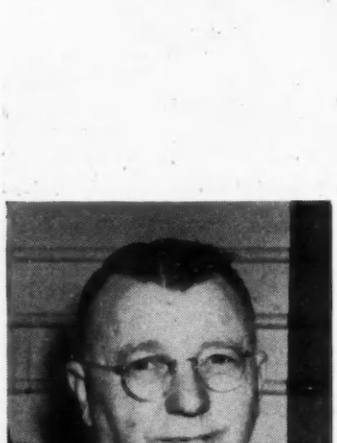
To get over the difficulty of bridging the gap caused by the communicating trench, special light-weight hinged bridge-pieces have been designed. Each supported by a bronze telescopic strut, these enable a vehicle to be driven over the trench, and, when it is in position, the bridge-pieces are dropped so as to make the underside of the vehicle freely accessible from one end to the other. This gives a clear field for the carrying out of a number of jobs at the same time. The bridging equipment can be put into position or removed by two men in less than one minute.

The independent built-in jacks are operated by opening or closing a corresponding valve in the pit underneath. By the use of cover boards across the pit and packing blocks under the axles the wheels can be lifted clear of the ground for removal. Oil operated and electrically powered, the jacks lie flush with the garage floor

(TURN TO PAGE 106, PLEASE)

# Trailer Rebuilding Program

## Saves Fleet Over 25%

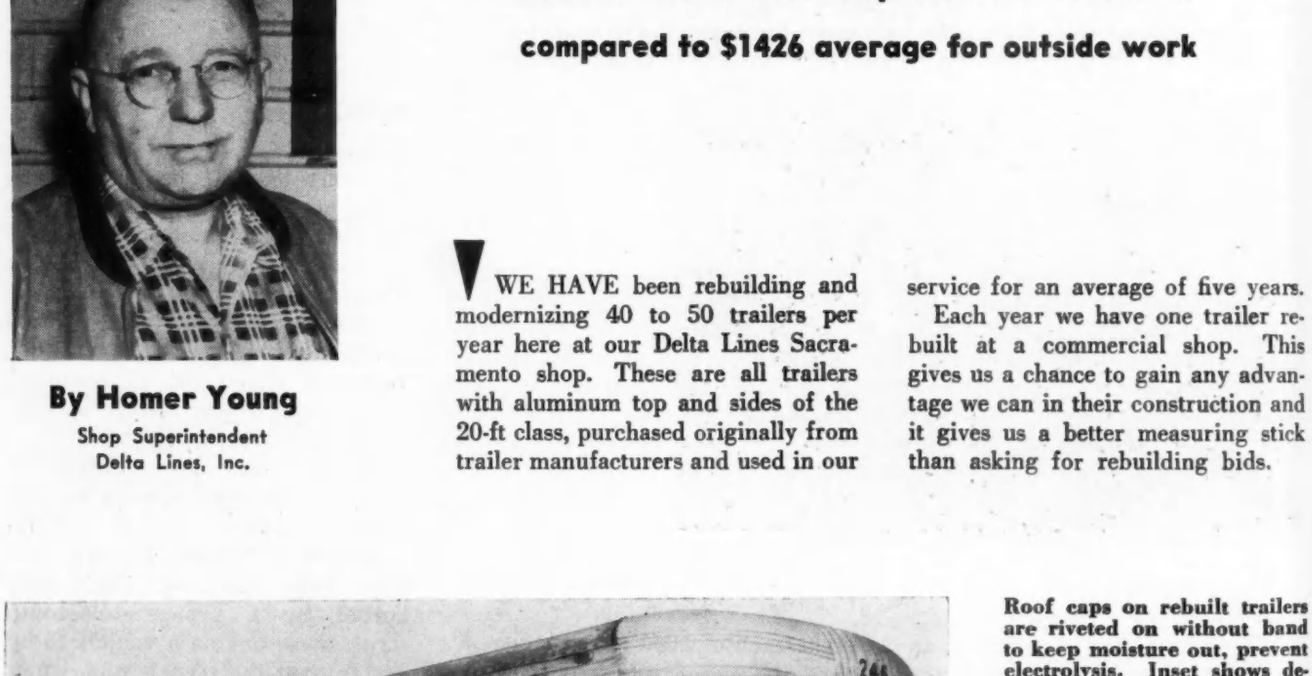


**By Homer Young**
Shop Superintendent
Delta Lines, Inc.

**Total cost of parts, materials, labor, overhead in fleet's own shop comes to $1067 as compared to $1426 average for outside work**

WE HAVE been rebuilding and modernizing 40 to 50 trailers per year here at our Delta Lines Sacramento shop. These are all trailers with aluminum top and sides of the 20-ft class, purchased originally from trailer manufacturers and used in our service for an average of five years.

Each year we have one trailer rebuilt at a commercial shop. This gives us a chance to gain any advantage we can in their construction and it gives us a better measuring stick than asking for rebuilding bids.




**Roof caps on rebuilt trailers are riveted on without band to keep moisture out, prevent electrolysis. Inset shows detail of side construction of corrugated aluminum with 25 rivets in each 25-in. sheet**

Our labor cost of about $623 per trailer plus parts and materials cost of about $444 per trailer gives a total remodeling cost of $1,067. When this is compared to our current estimates for doing the work in an outside shop—$1,426 at present—we are saving over 25 per cent on each remodeling job. In addition, we are confident that we are able to rebuild our 20-ft trailers better in our own shop and do it with a minimum of equipment.

On the average this modernization includes:

1. New steel sheet roof with a steel cap at the front put on without a band with rivets. This keeps moisture from seeping in and prevents electrolysis.

2. Sides are of corrugated close hard aluminum (same material as is now being used on the new Reliance trailers).

3. Floor of Douglas fir tongue and groove, 2 by 8 in., 1⅝-in. thick.

4. Base board installation allows us to haul grain and accounts for better interior housekeeping. We use No. 1 common Douglas fir for slats and a notched 1 by 4 in. and a 1 by 12 in. base board on both sides of the trailer at the bottom.

At the inside front we weld a 24-in. strip of 16-gage steel around the nose. This prevents pipe or steel bars or other loads of this type from shifting and being forced through the outside nose of the trailer.

After this steel reinforcing has been installed, we reinforce the inside front of the trailer with three sheets (standard 4 by 8 ft) ¼-in. Douglas fir plywood. This plywood is put on with metal screws. We have found the following to be the advantages to using Douglas fir plywood for the bulkheads on our modernized trailers:

1. Prevents load from shifting and damaging the metal front of trailer.

2. It is an inexpensive light weight material.

3. Complete replacement, because of the ease of installation, is a minor repair item.

4. It gives us a complete coverage on the inside of the trailer for that part bulkheaded.

5. We find that the plywood is much easier to bend to the contour of the trailer inside than slats or Douglas fir 1 by 12 in. pieces.

6. The plywood bulkhead outlasts a solid wood bulkhead two to three years on average installation.

## Long Life Doors

WE HAVE developed a door for our trailer modernization program which is giving us a much longer life and a safer record. This door has a 2 by 4-in. Douglas fir frame, with inside face plates of ¼-in. Douglas fir plywood cut to fit the frame. The outside of the door is lined with cold roll (20 gage) and the edges with rubber weather stripping to prevent water penetration.

Formerly we used aluminum for our trailer doors but we found that on a heavy load over rough highway the doors chafe at the edges and soon wear through. Using the 20-gage cold roll has completely done away with this and gives us a much

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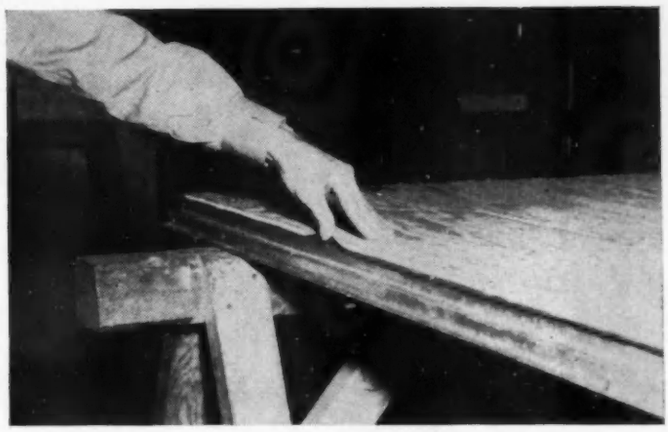
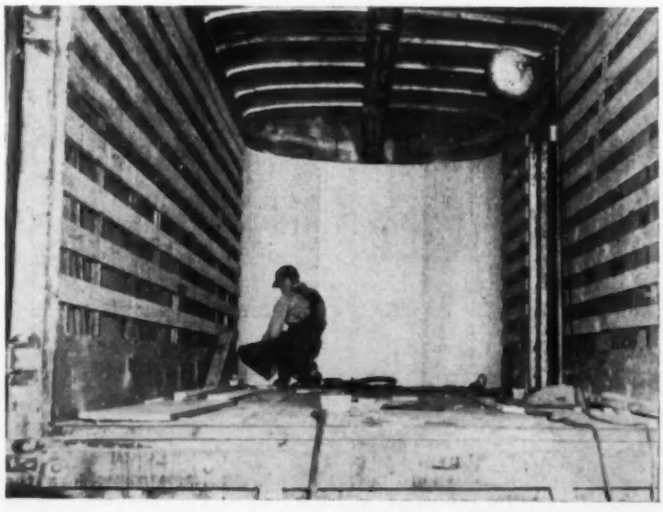


**Doors are made of Douglas fir 2 by 4's. Inside liner is of ½-in. plywood. Outside is framed and edges covered with 20-gage cold rolled steel. Edges have pure rubber weather strip**

**Baseboard seal is made of 1 by 4 and 1 by 12, acts as seal when hauling grain, prevents dirt and trash from collecting**

**Plywood bulkhead is used in trailer nose. Fleet says experience shows it outlasts wood bulkhead two to three years**

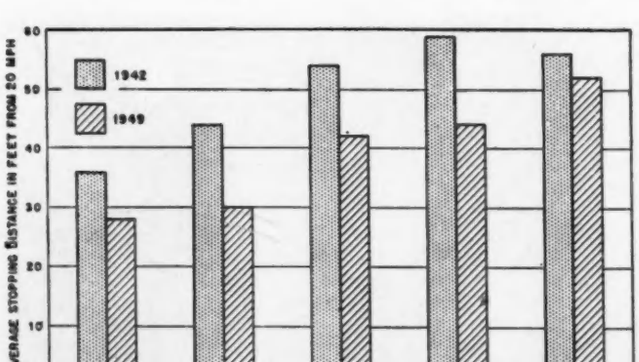


# BPR Study Shows How to Im

SUMMER MEETING

In 1942 the Bureau of Public Roads conducted an extensive study of brake performance of cars and trucks selected at random from traffic. Vehicles of all types were weighed and subjected to three emergency stops from a speed of 20 mph. Later other tests were conducted on 311 cars, 413 single unit trucks, 401 truck tractors with semis, 54 trucks with full trailers and 60 truck tractors with semi-trailers and full trailers. Results are interpreted below.

| Type of Vehicle | Stopping Distance, ft. 1942 | Stopping Distance, ft. 1949 | Improvement in Percent |
|---|---|---|---|
| Passenger cars (with hydraulic brakes) | 24 | 20 | 17 |
| 2-axle trucks | 39 | 28 | 28 |
| 2-axle truck tractors with 1-axle semitrailers | 54 | 39 | 28 |
| 2-axle truck tractors with 2-axle semitrailers | 65 | 43 | 34 |
| All other combination units | 66 | 53 | 20 |




| Vehicle Type[1] | Number of Vehicles | Average Percentage of Improvement for Initial Speeds of: 20 mph Brake Adjustment Only | 20 mph Total | 30 mph | 40 mph |
|---|---|---|---|---|---|
| 2 Axle | 4 | 9.3 | 10.5 | 6.2 | 8.8 |
| 2-S1 | 22 | 8.9 | 16.2 | 16.4 | 17.6 |
| 2-S2 | 12 | 6.5 | 10.2 | 8.4 | 11.1 |
| 3-S2 | 4 | 13.4 | 17.6 | 19.6 | 21.2 |
| 3-2 | 3 | 12.7 | 24.7 | 23.9 | 22.0 |
| 3-3 | 8 | 5.7 | 12.3 | 11.3 | 10.0 |
| 2-S1-2 | 8 | 12.2 | 21.8 | 20.4 | 19.3 |
| 2-S2-2 | 2 | 10.8 | 13.5 | 15.2 | 13.2 |
| Weighted average | .... | 9.0 | 15.3 | 14.6 | 15.4 |

[1]=2—2-axle truck, 2-S1—2-axle truck tractor with 1-axle semitrailer, 2-S2—2-axle truck tractor with 2-axle semitrailer, 3-S2—2-axle truck tractor with 2-axle semitrailer, 3-2—3-axle truck with 2-axle trailer, 3-3—3-axle truck with 3-axle trailer, 2-S1-2—2-axle truck tractor with 1-axle semitrailer and 2-axle trailer, 2-S2-2—2-axle truck tractor with 2-axle semitrailer and 2-axle trailer.

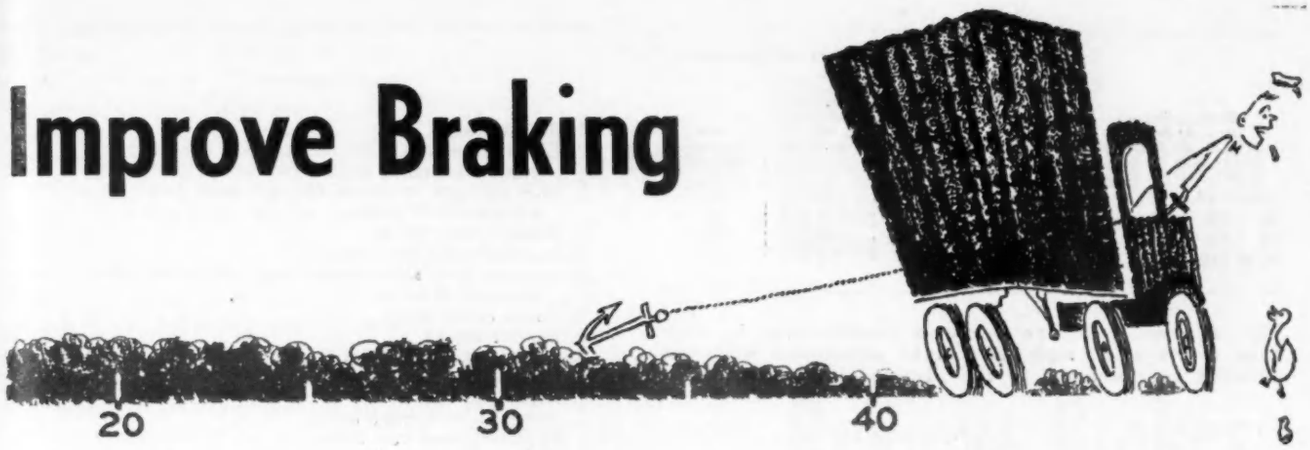
**Fig. 1, left. Comparison of vehicle stopping distances as observed in 1942 and in 1949 for various type units. Fig. 2, left, below. Graphic comparison of average stopping distance by GVW groups for the years 1942 and 1949. Fig. 3, above. Summary of the average percentage of improvement in stopping distance by vehicle type and speed**

**By F. William Petring**
Highway Transport Research Branch
U. S. Bureau of Public Roads

SINCE 1942 there has been considerable improvement in brake performance of motor vehicles using our highways. This can be attributed to excellent work of both vehicle operators and manufacturers of vehicles and brake equipment.

Fig. 1, based on the 50 percentile values of vehicle stopping distance, compares the improvement in performance of passenger cars and several types of commercial vehicles. The percentage of improvement was greater for each type of commercial vehicle than for the passenger cars, with the greatest improvement in the 2-axle truck tractors with 2-axle semi-

# Improve Braking



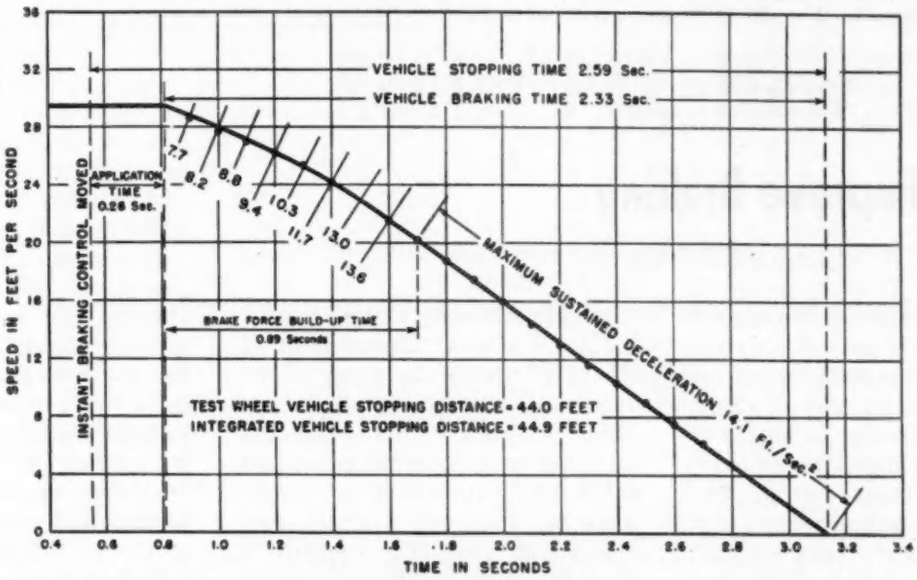




**Fig. 5. Time-speed record showing sequence of events that occur during stopping of a commercial vehicle. In order, they are (1) application time, (2) brake force build-up time and (3) maximum sustained deceleration. It illustrates the importance of reducing application and build-up time to the minimum**

trailers. Other combination units, of which 92 per cent had more than four axles, were the poorest performers and showed the least improvement percentage-wise of all types of commercial vehicles tested.

In comparing the performances of vehicles tested in 1942 and 1949, the validity of the amount of improvement shown for commercial vehicles by the comparisons of cumulative frequency distributions of vehicle stopping distances would be questionable without some consideration of the weight and capacity of the vehicles in each sample. In other words, if the weights of the 2-axle trucks were lighter in 1949 than in 1942 the improvement might be attributed to weight rather than to the braking system.

Fig. 2 shows what improvement was made in vehicles of the same capacity and approximate weight. These vehicles were first classified

(TURN TO NEXT PAGE, PLEASE)

**Fig. 6. Summary of work done to improve stopping distance on vehicles that required more than 50 ft to stop**

| Description of Work | Number of Vehicles |
|---|---|
| 1. Adjust brakes | 19 |
| 2. Replace relay valves | 9 |
| 3. Eliminate elbows, tees and lengths of line from air or vacuum plumbing system and change sizes of lines | 9 |
| 4. Increase application pressure through adjustment of pedal stop or control valve linkage | 5 |
| 5. Increase tank pressure through new governor or adjustment of limits | 4 |
| 6. Reline brake shoes | 4 |
| 7. Replace drums | 4 |
| 8. Remove synchronizing valve | 4 |
| 9. Replace foot control valve | 3 |
| 10. Increase brake chamber sizes | 2 |
| 11. Increase reserve tank capacity | 2 |
| 12. Replace slack adjuster or slack adjuster arm | 2 |
| 13. Eliminate leaks | 2 |
| 14. Increase brake arm lengths | 2 |
| 15. Connect front wheel brakes | 2 |
| 16. Lubricate linkage including slack adjusters | 1 |
| 17. Doctor linings | 1 |
| 18. Replace brake chambers | 1 |
| 19. Tighten anchor plates | 1 |
| 20. Install converter dolly with brakes | 1 |
| 21. Replace brake cam shaft and anchor pins | 1 |

| Stopping Distance Group As Received | Number of Vehicles | Average Stopping Distance As Received | Average Improvement | |
|---|---|---|---|---|
| | | | Brake Adjustment Only | Total |
| Feet | | Feet | Percent | Percent |
| Under 30 | 6 | 26.7 | 5.8 | 8.1 |
| 30 – 39 | 18 | 35.0 | 5.5 | 8.7 |
| 40 – 49 | 19 | 44.2 | 9.5 | 13.8 |
| 50 & over | 20 | 63.4 | 10.5 | 24.1 |

**Fig. 4, above. Average per cent improvement in stopping ability at 20 mph after brake adjustment work was finished as compared to the distance originally needed**

| Description of Work | Number of Vehicles |
|---|---|
| 1. Adjust brakes | 37 |
| 2. Eliminate elbows, tees and lengths of line from air or vacuum plumbing system and change sizes of lines | 10 |
| 3. Increase tank pressure through new governor or adjustment of limits | 7 |
| 4. Replace relay valves | 5 |
| 5. Increase brake arm lengths | 5 |
| 6. Increase application pressure through adjustment of foot control valve | 1 |
| 7. Reline brake shoes | 1 |
| 8. Replace drums | 1 |
| 9. Replace master cylinder | 1 |
| 10. Replace foot control valve | 1 |
| 11. Replace check valve | 1 |
| 12. Install higher friction lining | 1 |
| 13. Remove grease from lining | 1 |
| 14. Tighten relay mounting | 1 |
| 15. Remove synchronizing valve | 1 |

**Fig. 7, right. Repairs needed to up stopping ability of 43 trucks needing less than 50 ft to stop from 20 mph**

# How to Improve Braking

Continued from Page 75

into weight groups with a range of 5000 lbs. An average vehicle stopping distance was then computed for each group and year of study. For any given group, the height of the stippled bar indicates the average stopping distance for the 1942 test vehicles and the hatched bar, and the average stopping distance for the 1949 test vehicles. The number of vehicles included in the average is shown beneath each bar. Considering the 15,000- to 19,000-lb group, the average improvement in vehicle stopping distance from 20 miles per hour was 12 ft or an improvement of 22 per cent.

### Maintenance Pays

The results of the controlled tests of vehicles furnished by the truck operators clearly indicate that considerable additional improvement in brake performance is possible through maintenance procedures. Only 68 per cent of the vehicles could stop within 50 ft from 20 mph when first tested, but 87 per cent of them could stop in 50 ft or less when returned to the operators.

A summary of the average percentage of improvement in stopping distance is shown by vehicle type in Fig. 3. Considering the results for the initial speed of 20 mph, it is particularly significant that approximately three-fifths of the average total improvement of 15.3 per cent was accomplished by a brake adjustment which consisted of simply taking up the slack between the brake shoes and the drums. Another point of interest is that the average percentage of total improvement is about the same for all three initial speeds, although there is appreciable variation in the improvement with speed for a few of the vehicle types. One of the largest improvements was for the 2-axle truck tractors with 1-axle semitrailers and 2-axle trailers which have been previously singled out.

The amount and manner of improvement was found actually to vary with the magnitude of the stopping distance of the particular vehicle in the condition as first received from service. To illustrate this a simple analysis has been made of the variation of the improvement with the vehicle stopping distance. The results of this analysis are shown in Fig. 4. First the vehicles were classified according to four groups of vehicle stopping distances. Then the average improvement in per cent was computed for each of these groups. The average stopping distance for each group, and the percentage of improvement due both to brake adjustments and to all procedures is indicated together with the number of vehicles in each group.

It is seen in Fig. 4 that the improvement for the vehicles with stopping distances of 50 ft or more was nearly double that for the 40- to 49-ft group and almost three times that for the other two groups. For the three groups less than 50 ft, the improvement ascribed to brake adjustment is, respectively, 71, 63, and 69 per cent of the total improvement.

For vehicles with stopping distances of less than 50 ft, the study has shown that most major modifications and repairs which are costly in time and money result in only small gains in stopping ability. In many instances additional improvements, although small, could have been made if the equipment could have been held out of service for the required time. On the other hand, for the vehicles with stopping distances greater than 50 ft, it was learned that major repairs were required and necessary. There is no doubt that all of the stopping distances of more than 50 ft, from 20 mph, could have been reduced to less than 50 ft if the vehicles could have been retained in test status for sufficient time. As it was, 11 of the 20 vehicles requiring more than 50 ft to stop from 20 mph were improved so that the stopping distance was less than 50 feet.

(TURN TO PAGE 98, PLEASE)

The subject of brakes and braking distances is in the limelight in fleet circles everywhere. Truck and bus operators are endeavoring to improve braking performance through better maintenance, careful vehicle selection for the job and through assistance to manufacturers in design problems.

Yes, there IS something being done about brakes, and a series of articles scheduled for following months will show what fleetmen are doing from the standpoints of testing, selecting, modifying and bearing down on PM. Look for some outstanding results as reported by several representative fleets. . . .

# SUMMER S.A.E. MEETING

# Engineers Review Brakes, Reefer PM, New Oils

**Summer meeting covers variety of new developments. Maintenance of brakes and reefers gets special attention. Repair practices reviewed**

THE SUMMER meeting of the Society of Automotive Engineers in Atlantic City produced some commendable papers on a wide variety of subjects of interest to fleetmen. Here is a brief condensation of some of the papers and round tables that made engineering history last month.

### BPR Brake Tests

Making such simple, minor adjustments as reducing clearance beween brake drums and shoes can improve greatly the stopping ability of motor vehicles, engineers learned. F. William Petring, of the Bureau of Public Roads, said that numerous tests have established present brakes as being more efficient, but that constant maintenance still is necessary. He explained that the improvement clearly is revealed by comparable tests made throughout the country in 1942 and 1949, but warned that while passenger cars can be braked to a stop from 20 miles an hour in 21 feet, trucks need as much as 53 feet.

Mr. Petring said that the simple adjustment of taking up the slack between brake shoes and drums effects large-scale improvements in stopping ability. While further adjustments and even changes in equipment can be helpful, too, he explained, this first, simple adjustment makes an average improvement in stopping ability of nine feet as against two feet for the others.

The difficulty of defining "legal stopping distance" and "adequate brakes" was expounded by J. George Oetzel, of Warner Electric Brake & Clutch Co., Beloit, Wis., who said that inadequacy frequently is a shortcoming of the driver rather than of the brakes.

Mr. Oetzel expressed the opinion that "legal stopping distances," prescribed years ago, no longer meet safety needs and probably should be revised, although the problem is complex. He explained that while the present stopping requirements of 30 feet from 20 miles an hour may be satisfactory for passenger cars, commercial vehicles, and especially truck-trailers and trains, are more seriously affected by loading variables and weight shift.

It is going to be difficult, he commented, to legislate such factors as weight shift, loading variables affecting the center of gravity, and brake timing and rate of build-up. He warned that brakes capable of locking the wheels at high speeds are not the answer to the safety problem. We talk about the ability to "stop a little sooner," but the ability to lock the wheels will not necessarily make a shorter stop possible, and it can be even more dangerous. And when you can brake just short of locking wheels, that is the end of the line. There is no more unless you throw out an anchor.

### Shop Repair Practices

Where and when does it pay to send certain parts and units to outside garages for repair? That is a question kicked around for some time, but never so thoroughly as with this 6-man panel sponsored by T and M Activity.

(TURN TO PAGE 134, PLEASE)

# Accident Claims . . . Are

**Another example of how preventing accidents can save fleet operators money turned up in a recent issue of *"The Annals"* of The American Academy of Social and Political Science. By special permission, Commercial Car Journal presents this summary of three articles from that issue by A. E. Conard, professor of law at the University of Illinois, Joseph Schneider, practicing lawyer in Boston, Mass., and W. E. Sedgwick, member of the law firm of Keith, Creede and Sedgwick, Los Angeles, Cal.***

BOTH sides—plaintiff and defendant — lose money in an accident case. It doesn't make any difference who wins or if the case is settled out of court, both sides pay out dollars in the expenses of prosecuting or defending the claim.

And the only way to save that money is not to have the accident.

Expense is also a big factor in determining the amount of the actual claim payment. For the plaintiff there is a break-even point beyond which added dollars spent on prosecuting the claim will not produce enough added dollars in claim payments. And on the other side, for the defendant there is also a break-even point beyond which added dollars spent defending the claim will not save enough dollars in claim payments.

Legal theory is that a damage award shifts the loss from the one who was damaged to the one who caused the damage. But the shifting is accompanied by an expense to both parties.

Briefly, these expenses can be classified as follows:

1. Expense to the taxpayers—including fleet operators — who pay judges and jurors so that such cases may be settled.

2. Expense to the plaintiff who pays such expenses as lawyer's fees, expert witness charges, lost time and the like. If he wins, they can be deducted from the damages, but it must not be overlooked that they are expenses *in addition* to the damages incurred.

3. Expense to the defendant who pays charges similar to the above whether he wins or loses. If he is insured, he may be spared this and then be faced with an increased insurance rate.

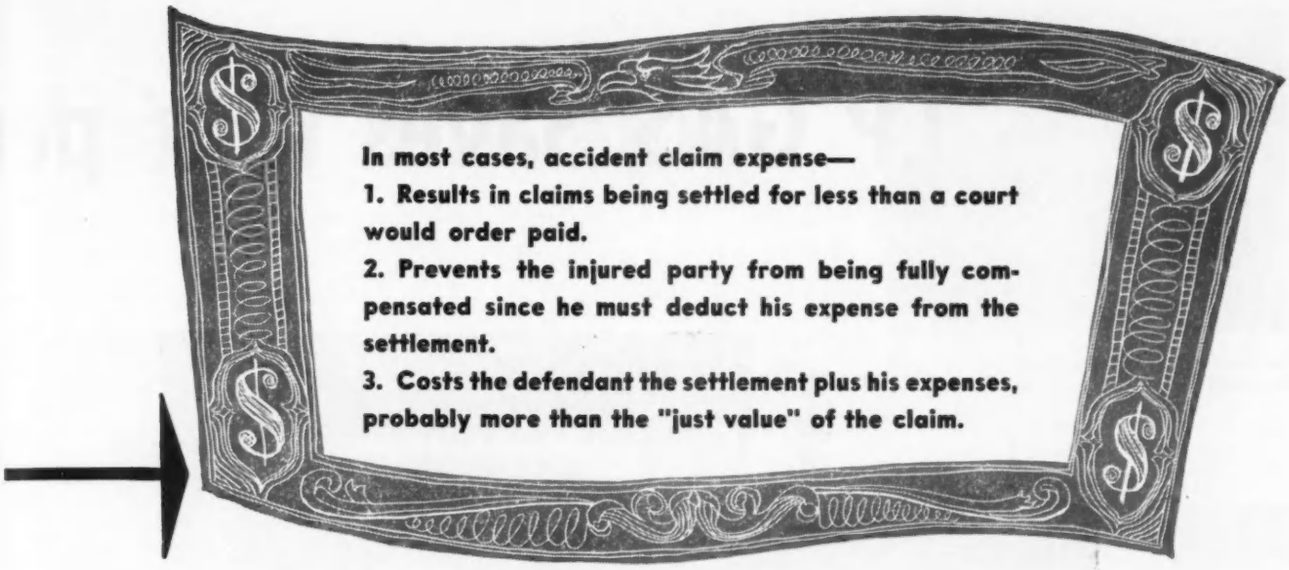
4. Expense to insurance companies who pass on their overhead cost in handling claims to their insureds as part of the insurance rate.

## Legal Expense

WHERE do these expenses come from? First step for both sides usually is to get a lawyer. If they are both insured, the legal staffs of their respective insurance companies go into action.

The plaintiff might engage a lawyer on a contingent basis. Under

* Copies of the issue of "The Annals" may be obtained from the American Academy of Political and Social Science, 3937 Chestnut St., Philadelphia 4, Pa., at $2.00 each. The title "Judicial Administration and the Common Man."


In most cases, accident claim expense—
1. Results in claims being settled for less than a court would order paid.
2. Prevents the injured party from being fully compensated since he must deduct his expense from the settlement.
3. Costs the defendant the settlement plus his expenses, probably more than the "just value" of the claim.

# They Worth the Expense?

this arrangement the lawyer gets a percentage of the damage award if he is successful in winning the case. If the plaintiff does not win, he is at least saved the lawyer's fee.

Under these contingent agreements, the amount the lawyer gets varies. A rough average is about one-third of the total claim payment. Expense then, so far, might cost the plaintiff one-third of what the jury would award in damages. If the plaintiff could estimate that amount, he could save the lawyer's fee, time and some other claim expenses by settling out of court for one-third less. The drawback is that he usually lacks the knowledge and experience to make an accurate guess at what the jury might award him.

Chances are the plaintiff could retain a lawyer on a fixed fee basis for less than the contingent fee. It has the advantage of fixing the amount of the lawyer's charge. Drawback is that it has to be paid regardless of the outcome of the case—win, lose or draw.

### Fact Expense

THE next major item of expense might be termed the cost of getting the facts. It usually starts with the hiring on an experienced investigator. He gathers and checks the known facts and circumstances of the accident, including police records, newspaper stories, photographs, names of witnesses and the like.

To the investigator's charges must be added the expense of making copies of the available records and probably the taking of additional photographs of the scene of the accident to prevent subsequent changes from confusing the location and the witnesses. (For discussion of the value of photographs in court cases, see CCJ's May, 1953, issue, page 72.)

Witnesses' stories must be taken down in their own language as soon as possible, adding to the expense of collecting data.

### Waiting Expense

THE length of time between the accident and the final settlement is an expense that works against the plaintiff. In Massachusetts, for example, the time lapse is about three years. During this time lapse, the plaintiff is carrying the loss and the longer he does so, the more likely he will be to settle for less than the fair value of his claim.

Expense continues to add up even if the case moves into court. It is not uncommon these days to see in court complete skeletons, wax dummies with come-apart sections, colored photographs of various injuries, motion pictures and other means of presenting evidence to the jury dramatically and sensationally. These all add to the cost.

The use of expert testimony is increasing. Traffic engineers and safety experts, medical authorities and actuaries often aid the plaintiff to win the case through their specialized knowledge. But their fees must also be paid. Experiments, performed both in and out of court, have become a way of proving points to the benefit of the defendant or the plaintiff that also increase the expense. (For example of this last, see CCJ's March, 1953, issue, page 94.)

### Insurance Expense

MOST defendants today are covered by insurance. By paying a smaller fixed charge over the years, they have tried to avoid the larger cost of losing an accident. Thus expenses do not have the same immediate impact on the insured defendant as he has shifted some of the loss.

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# LP GAS Saves 1½¢ per Mil

Mistletoe has 17 2½-ton, LP gas tractors, uses them to pull special low height, 3-door, 30-ft trailers. Combinations average 500 miles a day at 39,000 lb GVW

**No LP gas road failures in 26 months says this fleet that specializes in scheduled express delivery of perishables, newspapers and movie films, where breakdowns can be costly**

IT NOW costs Mistletoe Express, Oklahoma City, approximately 1½ cents a mile less than it did two years ago to operate over each of the more than 2½ million miles covered annually by its line haul tractors.

These savings, according to maintenance supervisor Fred Ward, are the direct result of a program to convert all line haul units to LP gas operation. His entire main line fleet of 17 units had been running exclusively on LP gas for over 19 months, averaging 90,000 miles per month. For 1953, the first full year of standardized LP operation, Ward's figures show that Mistletoe saved almost $15,000.

### Reduce Road Failures

Big reason for Mistletoe's conversion to LP gas, in addition to the lower mileage, was an attempt to eliminate road failures. Mistletoe has an express-type operation delivering on schedule such items as newspapers, movie films, bank checks and other bank papers, meats and other perishables. Says Ward, "I haven't had a road failure on LP gas in 26 months of use."

The units in this line haul fleet are 2½-ton tractors pulling 30-ft, single-axle, van type semi-trailers. The trailers are standard van units with 16 in. cut off the top to provide the necessary clearance to get them into newspaper loading docks. The trailers are also equipped with doors on both sides as well as in the rear to facilitate the transferring of shipments and the handling of peddle runs. Average payload on line haul runs is 20,000 lb, gross weight is 39,000 lb. The line haul units make two trips daily averaging 250 miles each. Some units in the fleet clock in 3000 miles a week regularly. Running this kind of mileage with no allowance for breakdown calls for dependable operation.

# Mile for Mistletoe

Fred Ward, Mistletoe's maintenance supervisor, checks on LP gas refueling

Above. In foreground is special Ellis manifold that Mistletoe says ups fuel mileage an estimated 5 per cent.

At left. Mistletoe pays 12¢ per gal for LP gas as compared to 21¢ a gal for gasoline; does its own refueling.

### Less Maintenance

Every 10,000 miles, about once every three weeks under Mistletoe's normal operation, each line haul truck is brought in for a complete tuneup. This includes a minute check of all operating features of the truck—carburation. ignition and mechanical parts. This 10,000-mile check is designed specifically to eliminate road failures. This is when the Mistletoe mechanics catch bad spark plugs, carburetor adjustments, worn wheel bearings, alignment, and tire wear or defects.

At 150,000 miles, the average LP-operated engine is ready to have its valves ground. A major engine overhaul — which Fred Ward classes as a job where the pan has to come off—has never been required on any of Mistletoe's LP operated trucks.

Mistletoe keeps its line haul units for a minimum of 400,000 miles, putting an average of three valve jobs into each LP-operated tractor.

### Reduced Costs

The best idea of how good this operating program really is can probably be seen through comparing today's practices with what Mistletoe used to do when their line haul fleet ran on gasoline.

Costs for crankcase oil are now less than half. With butane, Mistletoe changes at 7000 miles. With gasoline, changes used to be made at 3000.

When a gasoline truck hit 100,000 miles, its engine had to be taken out and rebuilt. With LP, as stated above, the engines only need a valve job at 150,000 miles.

In order to establish what he felt was a necessary safety margin, Fred Ward used to insist on changing carburetors on his gasoline trucks every 25,000 miles. The cost for this was estimated at $40 every 100,000 miles. The corresponding adjustment on a butane engine is the replacement of a throttle shaft bushing at 100,000 miles. This costs 65 cents.

For the same security reason, Ward's program called for the

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# Shop Hints

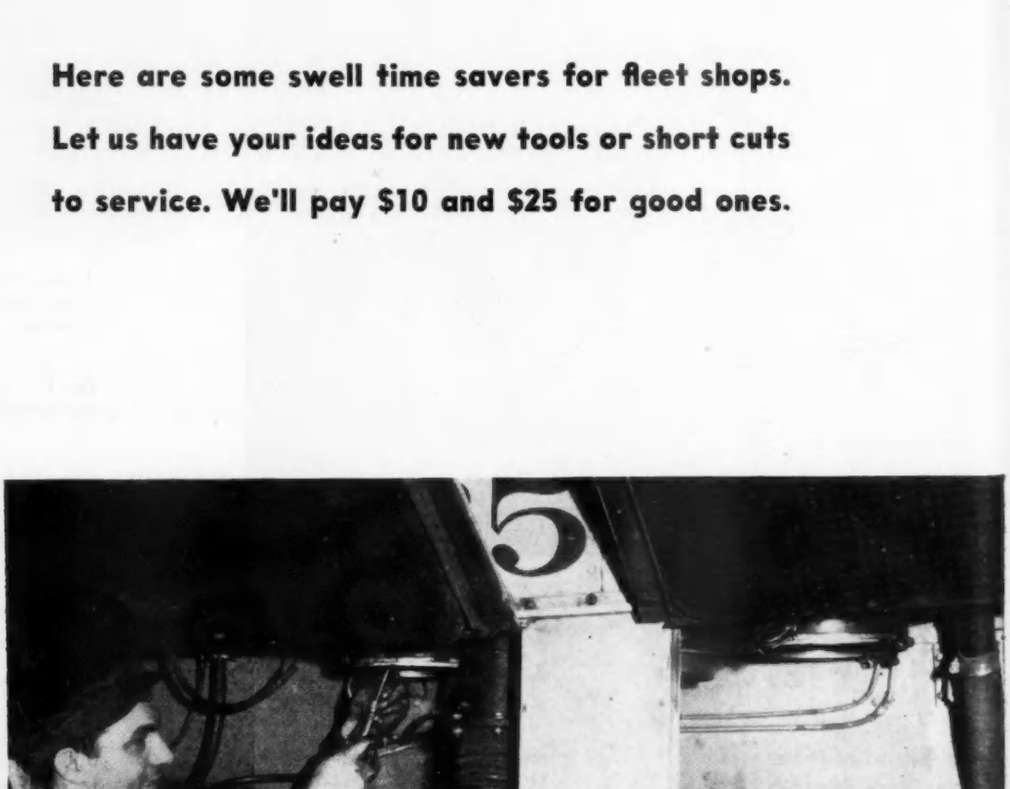
**Here are some swell time savers for fleet shops. Let us have your ideas for new tools or short cuts to service. We'll pay $10 and $25 for good ones.**

## Dirt Pan

By Joe Christopher
Cleveland Transit Co.

Servicing of air cleaners on rear-engine buses can make quite a mess on the engine when dirt and oil leak down during their removal. This dirt pan can save you a lot of clean-up time.

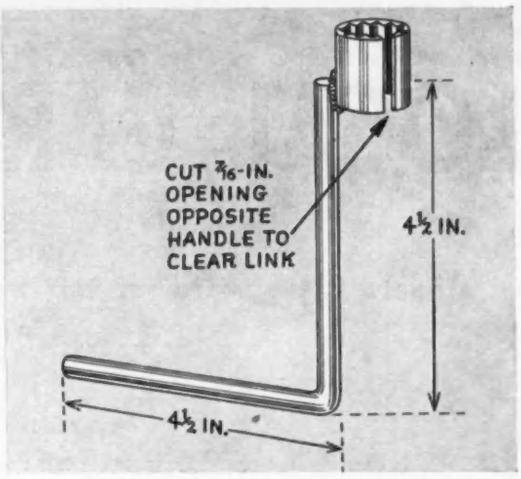
It was made from a piece of thin sheet metal with edges folded-up to form a rim. It is about 14 in. wide and 48 in. long and has a recess cut in the center to fit around the air intake hose. It can be removed or installed in a moment as it rests on the valve cover pans without need for hooks or bracing.



## Handy Tool Speeds Chevrolet Clutch Work

By Lloyd Curl, Rapid Chevrolet Co., Rapid City, S. D.

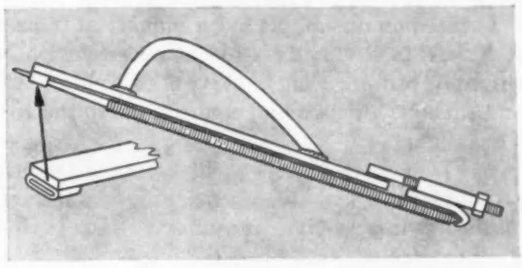
On 1947 through 1953 Chevrolet trucks, I've found it difficult to adjust the clutch linkage due to the fact that the left engine mount and exhaust pipe are directly below the adjusting nuts. This makes it impossible to use a regular clutch adjusting wrench. I've designed this tool that allows one to work in front or in back of the clutch housing with plenty of space to turn the adjusting nuts. It is a 9-in. length of rod to which has been welded an old wrench socket. A 7/16-in. opening has been cut in the socket to clear the linkage.




## File Holder Eases Welding Trim Jobs

By Frank P. Coulomb, Inglewood, Cal.

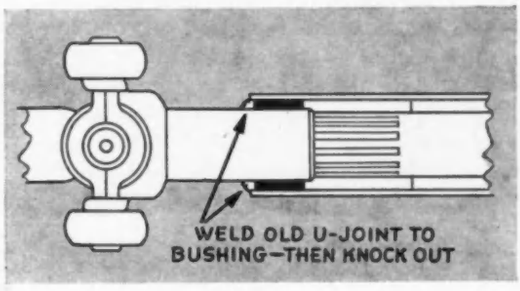
To speed filing work, especially after a welding job, I have found a file holder makes the job a lot easier. It is made of 1 by 1/4 in. flat bar stock to which a handle made of 1/2-in. tubing is welded. At one end, a short length of 1/2-in. Shelby tubing is welded to the bar and flattened to hold the file shaft. On the other end, a 5/16-in., threaded rod is welded to the bar. A short length of tubing is welded to a short piece of the 1/4 by 1-in. bar that has been crimped over on one end. The threaded rod runs through the tubing and is held with a nut as shown. Bevel both sides of the end of the file and place in the crimped holder and put the file shaft in the tubing. Then tighten the nut and it is ready to go.



## Old U-Joint Pulls Drive Line Bushings

By Lawrence E. Gray, Douglas, Wash.

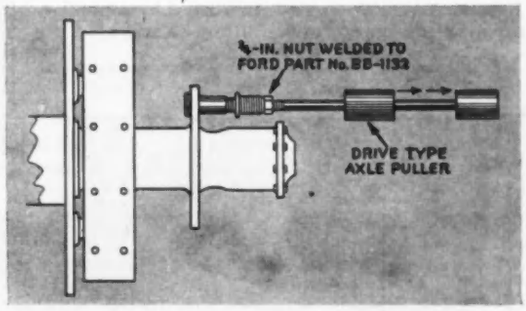
Here's a short cut I use in replacing drive line bushings and seals in late model Chevrolet 1/2-ton pick-ups. Split the universal joint and remove the back half. Slip an old U-joint on the drive shaft and about 1/2 in. into front universal joint bushing. Arc weld the U-joint to the bushing being careful not to hit the torque tube with the welder. Tap the U-joint ears and the bushing will come out. Using this tool, a bushing can be replaced or a drive line seal and bushing can be replaced without removing old seal or drive shaft bushing.




## Axle Puller Sets Ford Hub Bolts Tight

By J. R. Page, Service Manager, M.V.A. Motor Co., Hohenwald, Tenn.

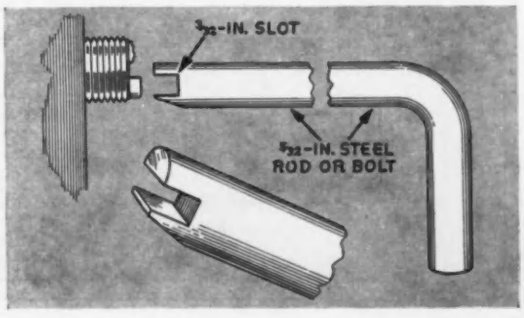
To replace hub bolts on 1948 through 1954 Ford trucks without removing hub or axle, this modified axle puller does the job. Weld a 3/4-in., standard nut to a Ford Part No. BB-1132 (or BB-1133 left hand). To replace hub bolt, start by removing wheel and brake drum and knock out the worn or broken hub bolt. From behind, fit in a new hub bolt being sure notches on the bolt and the hub are aligned. To the new hub bolt attach the above-modified Part No. BB-1132 and to this fasten the axle puller. Operation of the puller will set the new hub bolt tightly.




## Slotted Rod Removes Broken Setscrews

By Harvey Muller, Danboro, Pa.

A short length of 5/32-in. rod with a slotted head makes a handy tool that speeds removal of broken setscrews. A 3/32-in. deep notch is cut in the end of the rod. The outside of the end of the rod is then tapered to provide maximum clearance. When used as illustrated the tool will grip the remaining side of a broken setscrew and remove it.



# LOCAL CARTAGE FLEET Gets

**Modern is the word for this terminal. Outside storage facilities, compact service**

THIS Jersey City terminal constructed recently by Motor Haulage Company, Inc., of New York City, has been termed a truckman's dream.

Located on one of the main industrial thoroughfares, it is within a very few blocks of several of the busy shipping centers that it serves, as well as the Holland and Lincoln Tunnels and connections to the New Jersey Turnpike.

It has been designed to effect the most flexible and prompt movement of trucks and chauffeurs with a minimum loss in time and effort.

### Engine Heaters

Seventy-five of the company's more than 300 trucks are assigned to this terminal. All but five can be kept up to an easy starting temperature in the coldest weather. Most are equipped with Kim electric heating units. Forty-five all-weather 220-volt outlets are spaced at 10 ft intervals all around the walls of the parking area.

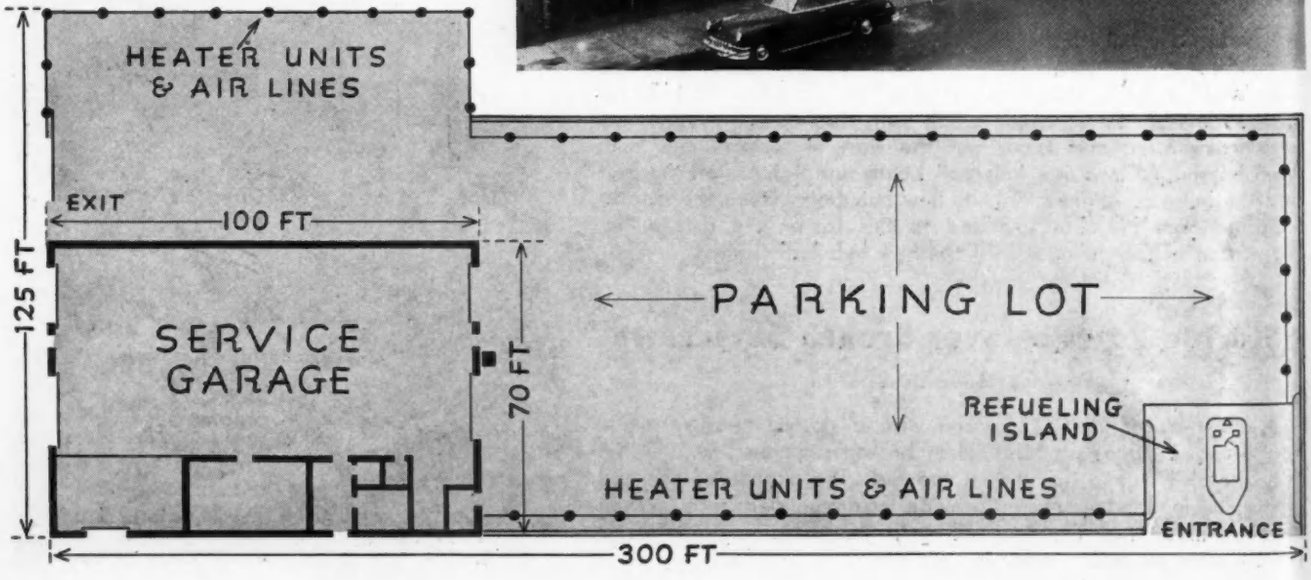
There is also a reel of heavyduty cable at the back door of the garage. This can be pulled out into the middle of the yard, where its five double outlets accommodate ten more trucks.

Waist high along the wall, runs the electric cable conduit and also piping for compressed air. With air outlets every 20 ft tires can be pumped on any truck without moving it. Also, to assist in spotting trucks into position at night, strips of reflecting tape are attached to the piping. They bracket the heater outlets at the exact spots where the headlights should line up, when the trucks are in place.

### Fueled at Entrance

The entrance at the back of the lot is through a

**At right. 700 sq ft service garage provides for repairs up to engine overhaul Below. Arrangement of facilities in new terminal designed for handling 75 trucks.**



# New Home

## shop layout make it "truckman's dream"

specially designed fueling station, with one side fully covered and the other side partially protected. Here a station attendant fills each truck with gas, oil and water, and then the switcher takes the truck on in, spots it, and when necessary plugs in the heater. When all trucks are in, the fuel station attendant goes through the whole yard and services the tires.

The fueling station has a small enclosed office, electrically heated. The motor oils are stored inside to maintain their fluidity. The oil is delivered outside under pressure, saving steps and extra handling. It retains fluidity because the hose is equipped with a thermostatically controlled heating element.

This fueling station was "carefully designed by the

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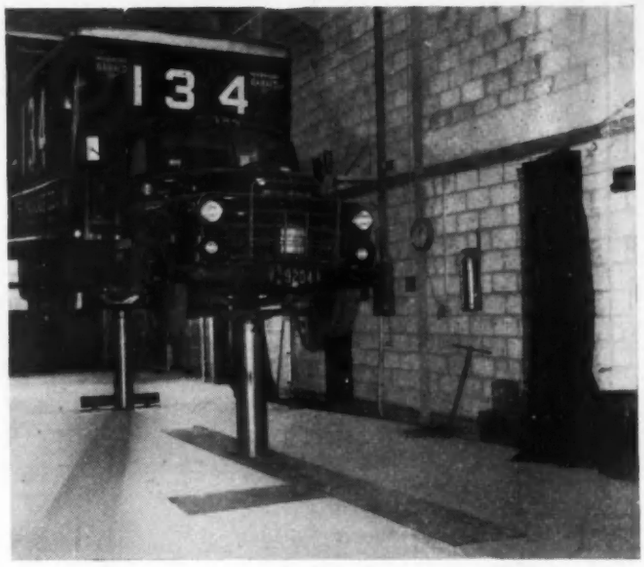
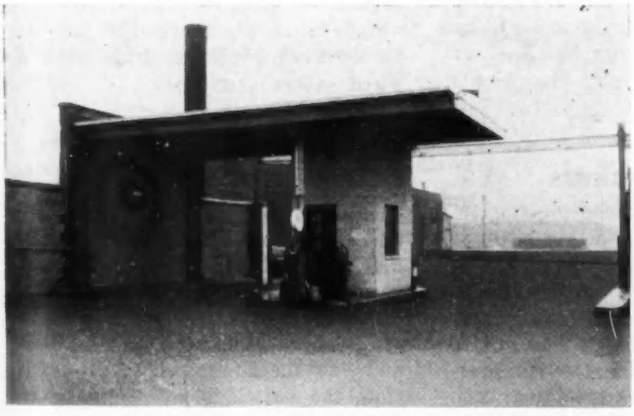
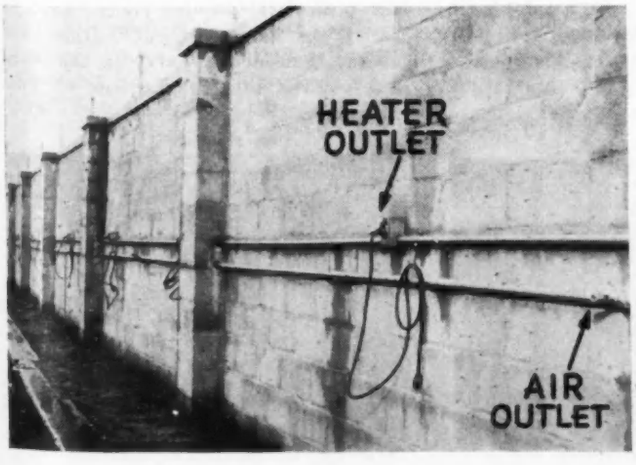



**Waterproof curtains can be spread to protect wall when steam cleaning underside of truck raised on 18-ton lift**

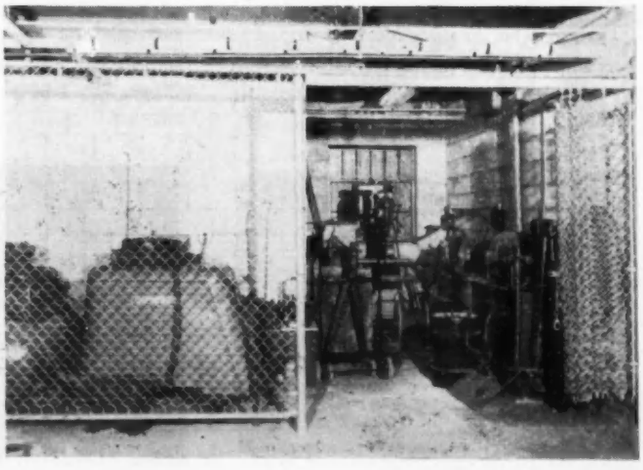
**Above. Stock room has plenty of cabinets and shelving space. Like rest of terminal, it is fluorescent lighted**



**Left. Trucks enter this gate at far end of yard at end of work day, are refueled and inspected and then parked**



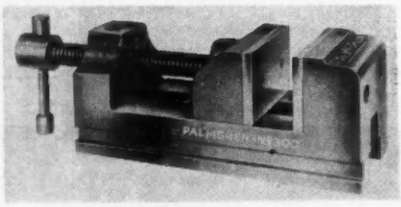

**Left, below. Engine heater and air outlets are mounted along the wall, speed truck starting and tire checking**



**Below. Fenced-in area provides protection and compact storage for both floor-mounted and wheeled shop tools**

# New PRODUCTS

**The latest developments in parts, accessories, tools and equipment for the fleet field, described in brief for your convenience**



## P1. Drill Press Vise

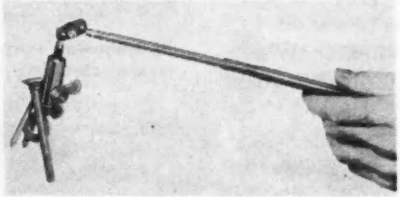
From: Chicago Tool & Engineering Co., Chicago.

"Palmgren" No. 300 drill press vise has jaws 3 in. wide, opens 3 in., depth of jaws 1¾ in. This vise has removable steel jaw plates and a heavy Acme thread adjusting screw. Machined slots are provided on either side to aid in clamping to the machine table. It is machined of semi-steel grey iron castings.

## P2. Brake Lining Riveter

From: Robinson Products, Inc., Detroit.

Air-powered, bench-model riveter will reline brakes of any size, from any vehicle. It will drive out or clinch all rivets from No. 4 to 10, inclusive. It has an air cylinder that delivers over two tons of pressure, taking a maximum of 150 psi from normal air supply lines. Semi-portable, it weighs only 60 lb, may be bolted or clamped anywhere in the shop. Riveter is foot operated with a metering-type treadle valve.



## P3. Retrieving Tool

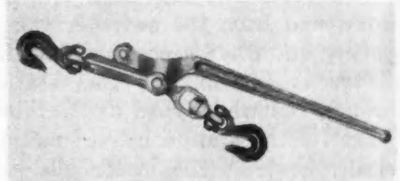
From: Ullman Products Corp., Norwalk, Conn.

Alnico V magnetic retrieving tool has all-angle ball joints to permit instant adjustment as required, with spring-tempered steel links to hold the pick-up angle firmly. It is available in three compact sizes: No. 1—13 in. closed, 26 in. telescopic; No. 2—7 in. closed, 14 in. telescopic; No. 3—8½ in. (not telescopic).

## P4. Bearing Packers

From: Lincoln Engineering Co., St. Louis, Mo.

New line of "Kleen-Pak" wheel bearing packers are engineered to pack both roller and ball-type bearings, with lubricant being packed into races and cages under positive pressure. Both bore and retaining cone in packer head are left free and clean of lubricant. They are available in five models, two designed for passenger car and light truck service and three for heavy-duty bus and truck service.



## P5. Load Binder

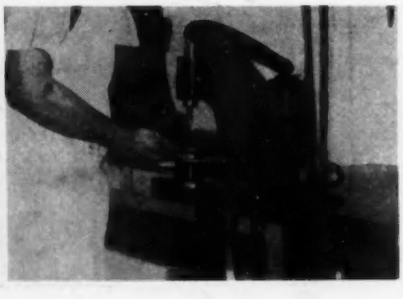
From: Thomas Laughlin Co., Portland, Me.

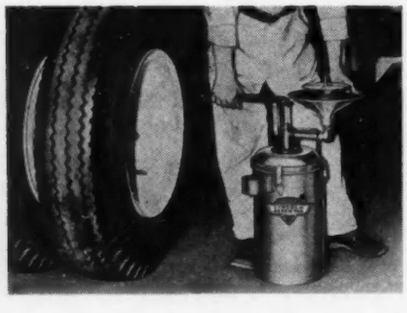
Load binder is said to eliminate jaw spreading by swinging the swivel tongue on the end of the slotted jaw handle and the clevis back on the trunnions. Because the swivel tongue swings on a pin inside the jaw, any force under pressure is directed inward rather than out.

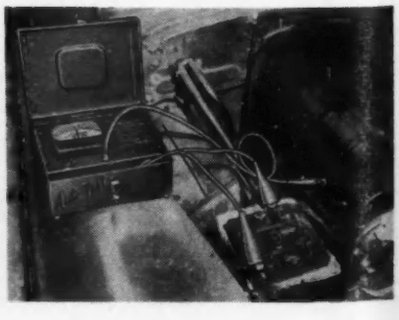
## P6. RPM Tachometer

From: Auto-Test, Inc., Chicago.

High-tension tachometer permits quick check of rpm, idle speeds, cylinder performance, engine load and distributor advance. It is battery operated. Single 2-position range switch accommodates both high-speed and low-speed ranges. For 0-1000 rpm, the switch is pushed backward. For 0-5000 rpm, the switch is snapped forward. It automatically adjusts for 6 or 12 volt input. Only one switch is needed to carry on the tests irrespective of the number of cylinders on the engine.









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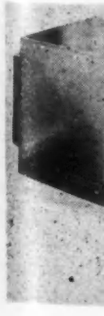


## P7. Power Take-Offs

From: Gar Wood Industries, Inc., Wayne, Mich.

This new series of power take-offs is designed for use with GMC heavy-duty trucks equipped with Hydra-Matic transmission. They incorporate an interlocking device to block out the automatic transmission high range speeds, and reverse when necessary to prevent damage to hydraulic pumps or other equipment which would result from the excessive speeds obtainable in transmission high ranges.

## P8. Spring Tension Gage

From: Standard Motor Products, Inc., Long Island City, N. Y.

This new Model No. STG-10 spring tension gage is designed for use in installing point sets. Included are instructions on how to use the gage, and how to correct the tension on points if it does not agree with the specifications.

## P9. Truck Mirror

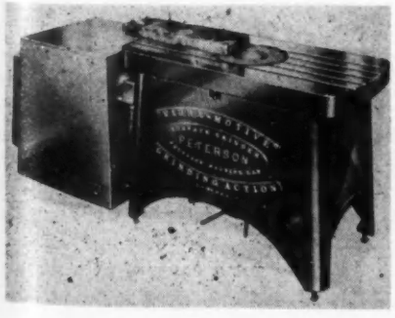
From: Sparton Automotive, Division of Sparks-Withington Co., Jackson, Mich.

This new 8 by 18 in. mirror has a new style mounting bracket. Two one-piece brackets made of 3/16 by 1¼-in. cold rolled steel, take the place of four conventional mounting "feet."

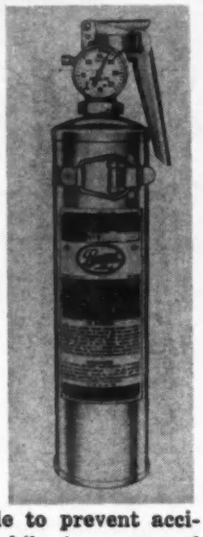
## P10. Surface Grinder

From: Peterson Welding Labs, Inc., Kansas City, Mo.

Model No. 42-D, 42-in. surface grinder is specifically designed for light trucks and passenger cars. It does grinding of cylinder heads, blocks, manifolds, clutch plates, flat fly wheels, etc. This smaller-sized grinder features the same patented "vibra-motive" lap-grind action as that employed by the larger models of Peterson surface grinders. The manufacturer states that it will accurately grind the average badly-warped light truck head in less than 10 min.



## P11. Fire Extinguisher



From: Pyrene Mfg. Co., Newark, N. J.

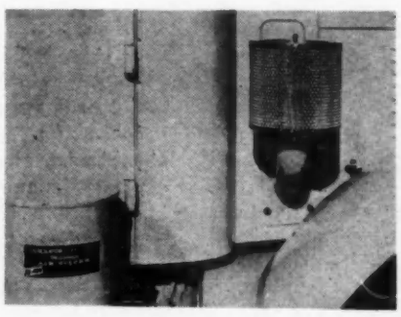
Single cylinder pressure type vaporizing liquid fire extinguisher is available in both 1 and 1½ qt size, features a unique on-and-off thumb lever mechanism that gives the operator instant finger tip control of discharge. Locking device has been incorporated in the carrying handle to prevent accidental discharge while in a stowed position. Air pressure gage permits quick visual inspection. Service air line valve facilitates fast on-the-spot recharging. The extinguisher is constructed of brass throughout.

**On page 146 of the May issue, New Product Description No. P 18 gave details on stock shafting available for power take-off drive lines available from Muncie Parts Mfg. Co., Muncie, Ind. Through error, maximum diameter of the shafting was given as 1 3/16 in. Correct maximum available diameter of the round shafting with the keyway already tooled in is 1½ in.**

## P12. Air Filter

From: Purolator Products, Inc., Rahway, N. J.

Dry-type "Micronic" air filter for gasoline and diesel engines is similar in construction to the Purolator "Micronic" automotive filter for lubricating systems. Advantages claimed for the new unit are a higher degree of filtration, thereby reducing the entrance of air-borne abrasives into an engine; a freer flow of air into the combustion chambers; and, since it is easier and cleaner to service, a greatly reduced serviceability time.



## P13. Nylon Inner Tube

From: United States Rubber Co., New York City.

New, U. S. Royal nylon "Lifewall" tubes are now available for light trucks. This air container, made of two plies of nylon, is being offered in four sizes: 6:00 by 16, 6:50 by 16, 7:00 by 16, and 7:50 by 16.

## P14. Power Take-Offs

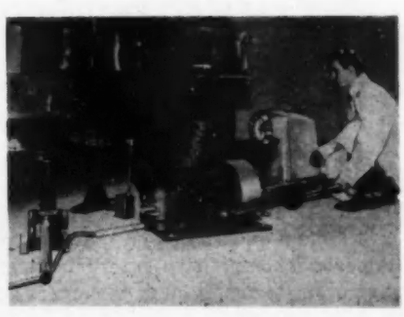
From: St. Paul Hydraulic Hoist, Mattoon, Ill.

These two new power take-offs are designed for use with GMC Heavy-duty trucks equipped with Hydra-Matic transmission. One model power take-off is operated only in the forward 1-2 low range speed of the transmission. An interlocking device prevents it from being engaged in any other position. The other model power take-off can be operated in both the forward 1-2 low range and the reverse speed of the transmission.

## P15. Wheel Balancer

From: Alemite Division, Stewart-Warner Corp., Chicago.

Electronic wheel balancer is said to eliminate unbalance of bus and trailer wheels (including duals) "on the vehicle." It balances to precision both planes: (1) up and down motion of the wheel, called "road tramp," or bounce; (2) side to side motion of the wheel, called shimmy or wobble. Everything that rotates, tire, tube, wheel, hub cap and brake drum is balanced as a unit. The basic balancer unit, includes chassis, electronic dual-range meter and strobe light all mounted in a portable cabinet, plus a vibration pick-up unit with 10 ft of cord, and 20 ft of power cord. The amount of unbalance is relayed by the pickup through the amplifier and is recorded on the meter indicating the amount of weight to be applied. Four wheel spinners—1¼, 2½, 5 and 7½ hp—covering a complete range of passenger car, truck and bus applications are available as accessories to the balancer.



# Free PUBLICATIONS

**FOR YOUR CONVENIENCE USE THE POSTCARD ON PAGE 86**

## L1. Piston Pin Data

This two-color, 24-page, pocket-size handbook covers a field often overlooked—piston pin fits. It is fully illustrated with 15 photographs and 12 line drawings together with a well-written text. First section on "precision pin fits," gives the characteristics of a good fit and discusses some common poor piston pin fits, concluding with a three-point procedure for checking pin fit.

Following sections present an analysis of various causes of piston pin fit troubles. Subjects included are: Effect of Temperature, Tight Pins, Causes of Pin Seizure, Effect of Heat on Piston and Piston Cam Action and How Piston Fits Cause Piston Failures.

For your copy of this handy guide to piston pin maintenance, circle L1 on the post card on page 86.

## L2. Hydraulic Valve Lifter Summary

This summary of the operation of hydraulic valve lifters in passenger car engines will be of interest to light truck fleet operators. It is a 12-page, well-illustrated review of how hydraulic valve lifters work, what troubles are likely to be encountered, and what their lubrication characteristics are. Circle L2 on the postcard for a copy.

## L3. Truck and Bus Tire Manual

Here is a handy, pocket-size manual on truck and bus tire care. It includes a table of commodity weights to help in determining wheel loads and most economical tire size.

The section on Technical Data and Information includes charts and text describing effects of overloading and speed on tire life, dual tire load distribution, changeovers, clearance measurements, rim types, rim selection and maintenance, tire and tube mounting, static and dynamic balancing and dual matching.

For a copy of this handy tire guide, circle L3 on the postcard on page 86.

## L4. Educational Business Film

The Chamber of Commerce of the United States has available a full color film designed to tell the story of the American competitive enterprise system. In simple, often humorous terms, it helps to correct general misunderstandings about business by explaining how profits and individual investment create jobs, how competition keeps values high and prices low, how advertising benefits everyone.

For information on how to obtain this film for showing to local civic organizations, service clubs and schools, circle L4 on the postcard.

## L5. Engine Air Service Bulletin

Diesel engines require about one trailer-full of air for each gallon of fuel for efficient operation, says this interesting bulletin on engine air. Primarily intended for diesel engine users, it will also be of interest to gasoline engine users. It describes the engine's need for plenty of air, for clean air and for air of the right temperature. Second half the booklet tells how operators can best be sure engines are getting enough air, clean air, and air at the right temperature. A special two-page section in the back outlines air cleaner maintenance for highway and for off-highway units.

Circle L5 on the postcard on page 86 for a copy of this important bulletin on engine air.

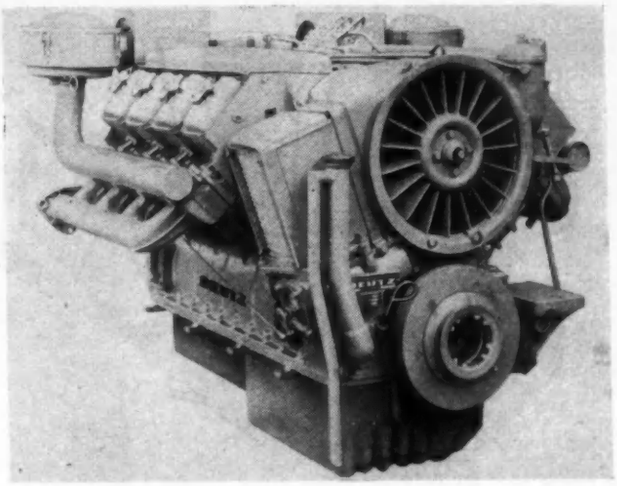
## L6. Truck-Highway Speech Reprint

Recently, at a meeting of the Ohio Highway Users Conference, Louis B. Seltzer, *Cleveland Press* editor, gave a hard hitting and thought-provoking speech on the problems arising from trucks on the highways. It is a speech every fleet operator should read for a better understanding of the public relations problem he is faced with. Copies are available by circling L6 on the postcard.

## L7. Welding Safety Handbook

Pocket-sized, brief, well-illustrated is the description of this new welding safety handbook. It covers the entire welding job starting with rules for personal safety, goes on to give safety tips on cylinders, torches and regulators, hose, setting-up jobs, adjusting pressures, backfires and flashbacks, shutting down, generators and pipelines, fire prevention and special hints for working on tanks and containers. Sections are included on safe handling of oxyacetylene and electric welding.

Circle L7 on the postcard to get a copy of this manual for your welding department.



# German Diesel

## Bids for U.S. Market

### Construction of Deutz air-cooled unit permits unit replacement of cylinders

A MAJOR effort to capture part of this country's market for truck and bus diesel engines is currently being launched by the distributors of the German-made Deutz air-cooled diesel engine. The Deutz line is handled here by Diesel Energy Corp., New York City.

A number of the Deutz engines have been operated experimentally by U. S. fleets, and on the basis of the results of these tests a national sales program is now being launched.

The Deutz automotive line includes 4 and 6-cyl, in-line models and 6, 8 and 12 V-form units. The engines are rated at from 90 to 250 bhp at 2250 rpm. Net weight ranges from 1078 lb for 4-cyl engines to 2750 lb for the heavy-duty, 12-cyl engines. All engines are electrically started, use two 12 or four 6-volt batteries.

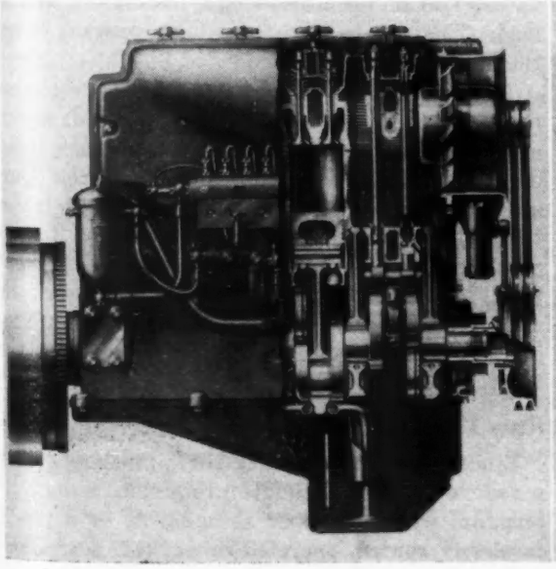
**Convert to Gasoline**

With minor adjustments the engines may be adapted to operate on gasoline or they may be purchased equipped for alternate operation on gasoline or diesel fuel.

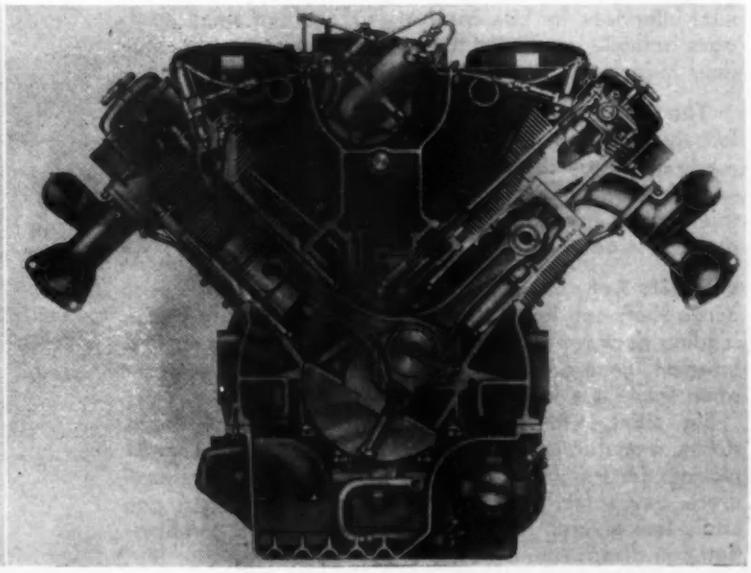
Major features of the Deutz line are, comparative light weight

(TURN TO PAGE 144, PLEASE)

**Above. Side view of V-8 model. Other models include 4 and 6-cyl in-line and 6 and 12-cyl V-type. Below. Cut-away view shows pear-shaped turbulence area, overhead valve design, front mounted blower**



**Cross section view of V-8 model shows location of injectors, injection pump and governor. Cylinders and cylinder heads are integral units rather than part of the block. They can be replaced as a unit**



# Stop Thief!

## Cargo Pilferage

***Cargo theft is a problem.*** From April through December last year, the Federal Bureau of Investigation conducted over 133 special conferences throughout the United States. The subject under discussion was theft in interstate commerce.

They were not routine get-togethers of law enforcement officials and transportation executives, including 980 motor freight representatives. There was an important reason—the postwar boom in cargo loss due to theft. For example:

***Truck cargo theft runs into millions.*** According to the National Freight Claim Council, American Trucking Assns., all for-hire interstate motor carriers—only a fraction of total truck fleets—lose somewhat under $3\frac{1}{2}$ million each year as a result of freight theft.

Add to this a reasonable estimate for intrastate for-hire motor carriers—plus for-hire local cartage—plus private truck users both local and over-the-road, and you have an idea of the sizeable loss truck users face each year from cargo theft.

***Thefts are usually small.*** Analysis of 451 truck cargo thefts reported by the Cargo Protection Bureau over a 21-month period shows only 12 above $50,000. Over half of the 451 were $5000 or less, and over half of these were in the "up to 2000" bracket.

But these are the bigger ones—the kind that make newspaper headlines. The Cargo Protection Bureau reports that practically every truck on the road has from one to three single package losses per year. Says ATA's Freight Claim Council, speaking of the $3\frac{1}{2}$ million annual interstate for-hire truck theft, "Theft of small packages actually accounts for far more of this amount than does hi-jacking."

***Thefts include everything.*** Today's technique is largely "hit and run." Inflation and high prices have made almost all commodities—including heavy steel plate—desirable. Odds are a market can be found, so the thief grabs the goods—truckload or single package—and investigates later.

***Thefts happen anywhere.*** Records show that truck cargo theft can happen anywhere—terminal, city street, loading dock, open highway or coffee stop. Authorities, however, generally agree that a majority of losses occur when trucks are left parked and unattended.

Big cities, with their concentration of truck fleets, stores, manufacturing plants and warehouses, are good pickings for freight thieves. But that does not make rural areas any safer. A delivery truck in the suburbs can easily lose several packages. An over-the-road combination can disappear while the driver has coffee.

COSTS of small thefts are often way out of proportion to the value of the freight taken. Insurance usually compensates for the goods themselves, but there is no compensation to the truck operator—private or for-hire—for irritated customers, labor lost in searching, office work and executive salary used in handling the paper work, time consumed in following through on the details.

These costs are relatively the same regardless of the size of the loss—single package or truckload. The way to stop them is to prevent cargo theft.

If the insurance policy has a deductible clause, the truck user may also pay for the goods themselves—$50, $100 or even up to $500 each time, depending on the deductible amount. Truck operators, in some cases, pay for the small losses themselves rather than report them and face a possible increase in rate when their present policy expires. In these two cases, where the cost of the freight is added to the claim handling cost, it is even more important to prevent the theft.

### How To Do It

Since almost every truck theft involves either a vehicle without adequate protection, a dock or terminal without proper safeguards, or a truck carelessly routed, operated or parked, a success-

**Fleet theft prevention can stop losses that often cost out of proportion to the value of the freight stolen**

# Costs Millions

ful program centers on eliminating these conditions.

Developing such a program, says ATA's National Freight Claim Council, is a ". . . matter of deciding the degree of over-all protection that should be assumed, taking into consideration the relative value and desirability of the cargoes hauled, the locales in which trucks must operate, and the time of operation."

Five parts of a complete theft prevention program are:

1. Careful driver and dock personnel selection.
2. A theft discouraging clerical and freight handling procedure.
3. Physical protection for freight and vehicles.
4. Cooperation in group anti-theft organizations.
5. Cooperation with law enforcement officials.

### A Carrier's Program

Western Express Co., Cleveland, Ohio, has a program that meets its personnel and freight handling problems. It operates about 135 tractors, 300 trailers and 60 straight trucks, has 15 terminals in its interstate operation through Massachusetts, New York, Pennsylvania and Ohio.

Its program takes into account the following facts:

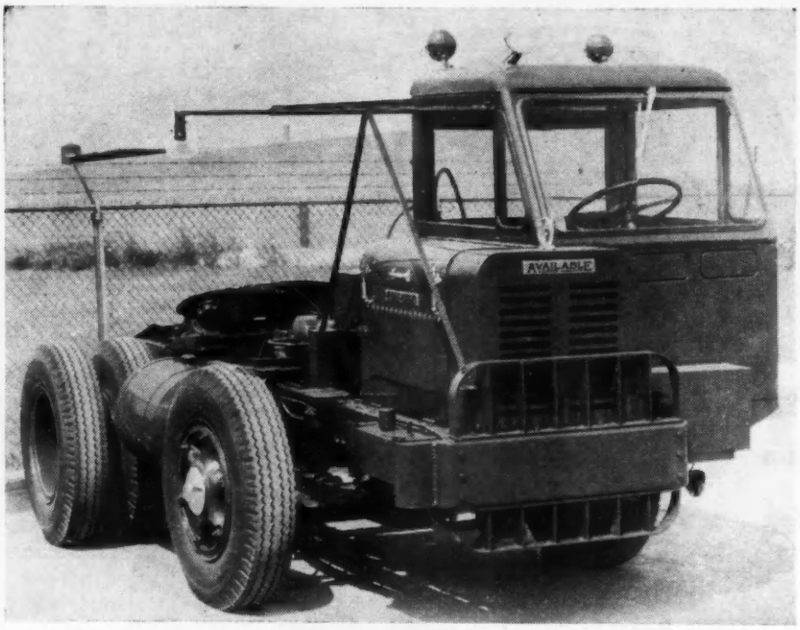
1. That the operation is spread over a large area—not under one roof or even in one city.
2. That freight on the dock is protected only by a series of overhead doors.
3. That the fleet's trucks are traveling daily either inter- or intracity and the drivers spend most of their time handling freight.
4. That protection must be had against dishonest fleet employees, dishonest shipper or consignee employees or dishonest outsiders.

Basically these factors are faced by all truck users in their theft prevention efforts, whether private or for-hire, local or intercity.

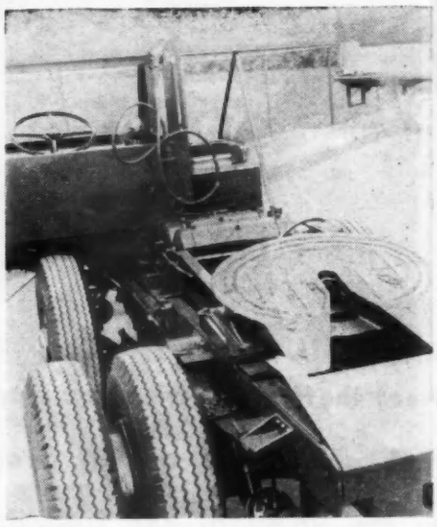
### Personnel Selection

Western's first aim is to get to know the man so trouble can be avoided before it begins. Careful

(TURN TO PAGE 121, PLEASE)




Front view of new unit shows cab-beside-engine construction. Cab offset is such as to line-up left side of trailer in plain view of the driver



Jockey has hydraulic lifting fifth wheel controlled from cab, brakes on all wheels

Rod near top of chassis frame transmits 5000-lb thrust from power steering cylinder—located forward—to pivot lever, shown at extreme right. This in turn transmits push to drag link for steering

# AVAILABLE'S "TERM-O-BILE"

## A Versatile Jockey

**Power steering and hydraulic fifth wheel contribute to unit's speed, flexibility**

THE LATEST specialized motor vehicle designed and built by Available Truck Co., Chicago, is the "Term-O-Bile" developed for Jewel Tea Co. as a flexible and economical unit for handling trailer spotting at its Chicago warehouse. Available believes it can also be applied to loading of trailers on flatcars in connection with "piggy-back" service.

Features of the new unit include: offset cab, power steering, hydraulic lifting fifth wheel, and torque converter.

### Offset Cab

As illustrated, the 44-in. cab is offset to left and is mounted alongside the engine. In fact, the driver sits completely to the left of the chassis frame. A large rear window permits the driver to sit in the cab at all times except when opening or closing trailer doors.

A Vickers hydraulic power steering system reduces steering effort to a minimum and an adoption of the Cemco trailer jockey—hydraulic lifting fifth wheel—makes it possible to hitch and unhitch trailers with a simple air control within reach of the driver.

### Compact Unit

The vehicle has a wheelbase of only 72 in., weighs but 8250 lb, and is powered with a 320-cu in. displacement Waukesha gasoline engine that provides 87 hp at 2800 rpm.

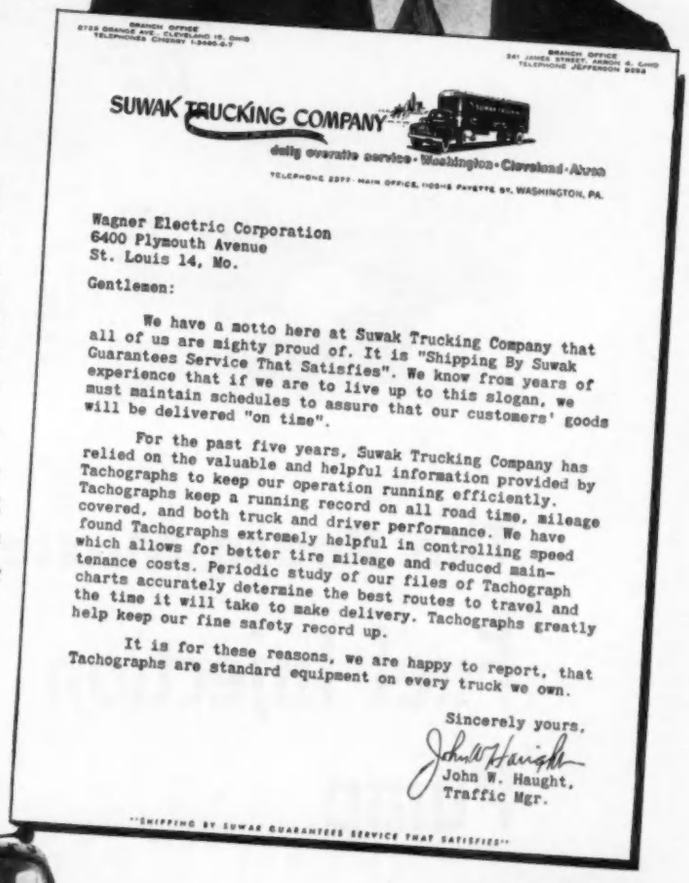
(TURN TO PAGE 106, PLEASE)

# "Tachographs are standard equipment on every truck we own!"

**says JOHN W. HAUGHT, *Traffic Mgr.***
**SUWAK TRUCKING CO., WASHINGTON, PA.**

Every day more and more over-the-road haulers, like Suwak Trucking Company, are equipping the vehicles they own with Tachographs. They know from experience that these time-tested recording speedometers help establish and maintain outstanding records on safety operations. They know, too, that Tachographs help make better drivers, protect rolling stock and costly cargo, which reflect in added economies in their over-all hauling operation.

The valuable information obtained from Tachographs will materially help speed up deliveries . . . set up the best routes . . . cut over-the-road operating costs . . . and reduce general maintenance. Get the facts on Tachographs, now. Mail coupon below for your free copy of Wagner Bulletin SU-3.



SUWAK TRUCKING COMPANY

daily overnite service • Washington • Cleveland • Akron

Wagner Electric Corporation
6400 Plymouth Avenue
St. Louis 14, Mo.

Gentlemen:

We have a motto here at Suwak Trucking Company that all of us are mighty proud of. It is "Shipping By Suwak Guarantees Service That Satisfies". We know from years of experience that if we are to live up to this slogan, we must maintain schedules to assure that our customers' goods will be delivered "on time".

For the past five years, Suwak Trucking Company has relied on the valuable and helpful information provided by Tachographs to keep our operation running efficiently. Tachographs keep a running record on all road time, mileage covered, and both truck and driver performance. We have found Tachographs extremely helpful in controlling speed which allows for better tire mileage and reduced maintenance costs. Periodic study of our files of Tachograph charts accurately determine the best routes to travel and the time it will take to make delivery. Tachographs greatly help keep our fine safety record up.

It is for these reasons, we are happy to report, that Tachographs are standard equipment on every truck we own.

Sincerely yours,
John W. Haught,
Traffic Mgr.

"SHIPPING BY SUWAK GUARANTEES SERVICE THAT SATISFIES"

534-7

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Wagner
Electric Corporation

**Wagner Electric Corporation**
**6476 PLYMOUTH AVE., ST. LOUIS 14, MO.**
***Please send a copy of Bulletin SU-3.***

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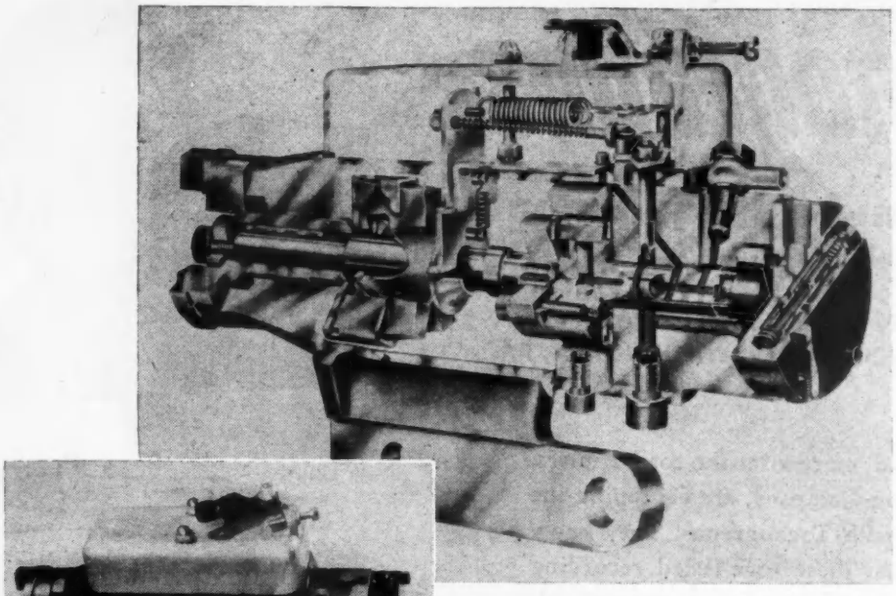
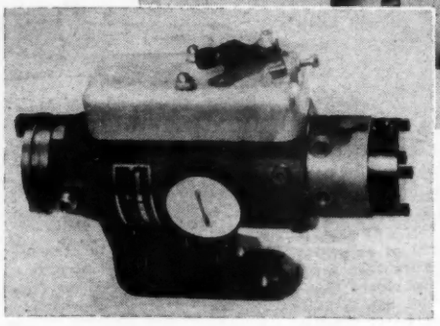
Company_____
Address_____
City_____ State_____
We operate_____ Vehicles
(NUMBER)

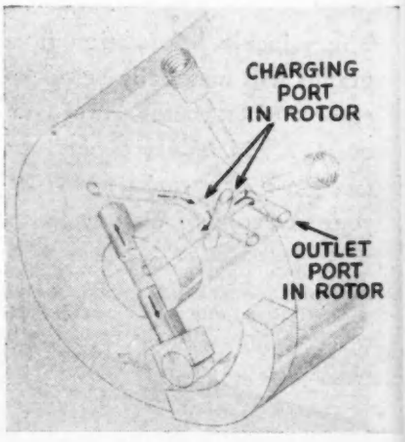




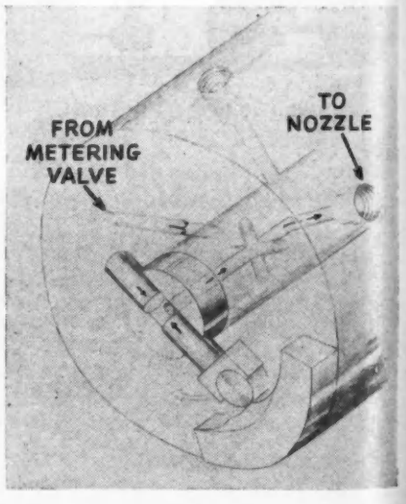
Above. Cutaway view shows the pump with centrifugal governor and bracket mount. Left. Another view of the above model. Also available is a unit that fits into the distributor housing and uses the existing engine governor to control feed

# The Roosa-Master Fuel Injection Pump

**New single cylinder, opposed plunger fuel pump for diesels meters and distributes fuel with a simple mechanism**




Heart of the injection pump is this opposed plunger which distributes metered charge of fuel to outlet ports. Above. View of the charging position. Below. Fuel flow during the discharge




THE ROOSA-MASTER fuel injection pump, developed by the Hartford Machine Screw Co., is a relatively simple pump featuring a design which is novel to injection systems. This pump is a single cylinder, opposed plunger, inlet metering, distributor type. It has operated successfully on both 2 and 4-cycle engines of 2, 4, 6 and 8 cylinders.

Installation can be made of any engine which does not exceed 150 cu in. per cylinder for a 2-cyl engine or 120 cu in. for a 6-cyl en-

(TURN TO PAGE 128, PLEASE)

# Chrome Steel Rails

*—another reason why*

## Sealed Power KromeX

**Piston Ring Sets deliver the world's best**

## ALL-AROUND PERFORMANCE FOR THE MOST MILES!

28 MAJOR ENGINE BUILDERS use Sealed Power chrome top rings!

Solid chrome faces on the MD-50 Steel Oil Ring—plus the solid chrome face on the top compression ring—give every KromeX Ring Set the top-and-bottom protection needed to fight heat, friction, abrasion, and corrosion. With top and bottom rings in each set so protected, the in-between rings are also protected—and the whole KromeX set delivers amazingly longer mileage. Factory seating assures fast break-in and immediate oil control. No other piston ring set can match Sealed Power KromeX results!

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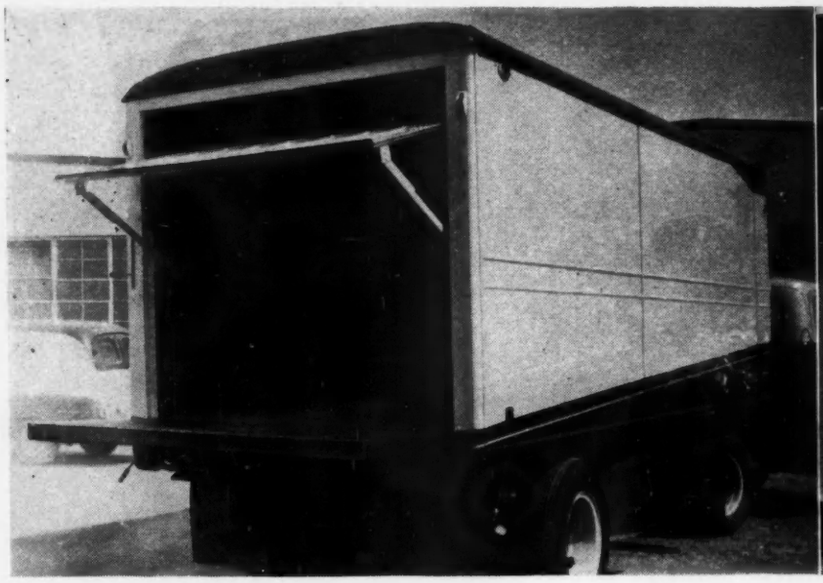
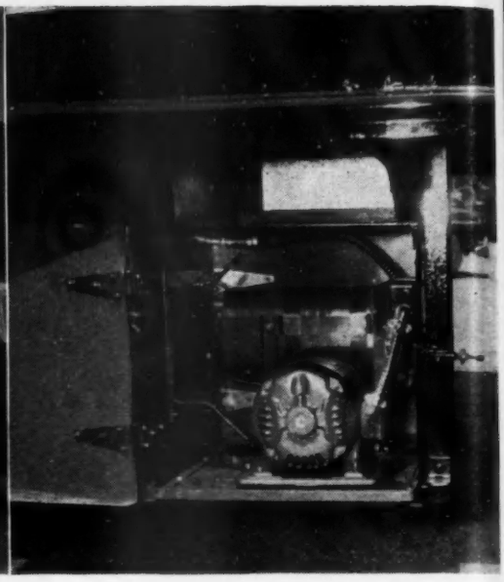
## Sealed Power Piston Rings

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

Sealed Power Motor Parts—*The Heart of the Engine* · Rings, Pistons, Pins, Sleeves, Valves, Water Pumps



Trailers are equipped with hydraulic lifting tailgate and manually operated, company-designed overhead doors



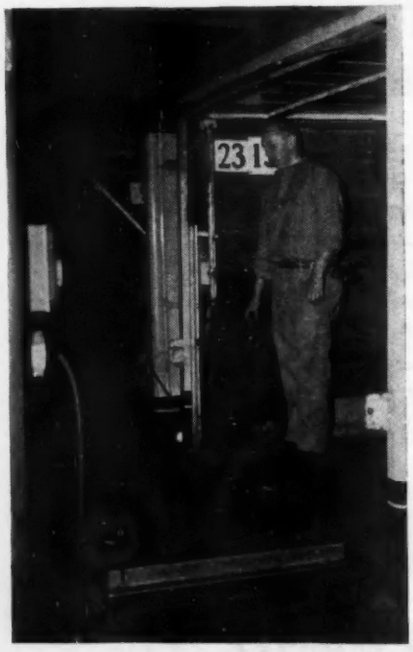
Mounted below trailer frame on right side, 110 volt, AC electric motor operates tailgate, uses city power line

# Electrically Operated Tailgates

## Serve Bakery Better

**Trailer fleet also uses company-designed door requiring only 18 in. of clearance**

With power line plugged into dock outlet (left foreground), driver controls tailgate speed with lever inside body



TO SPEED loading and delivery, Fred Sanders Co., Detroit bakery and confectionery maker, has installed electric motors on its trailers to operate hydraulic lifting tailgates. The fleet is also equipped with company-designed, counter-balanced trailer doors that require only 18 in. of inside space for clearance.

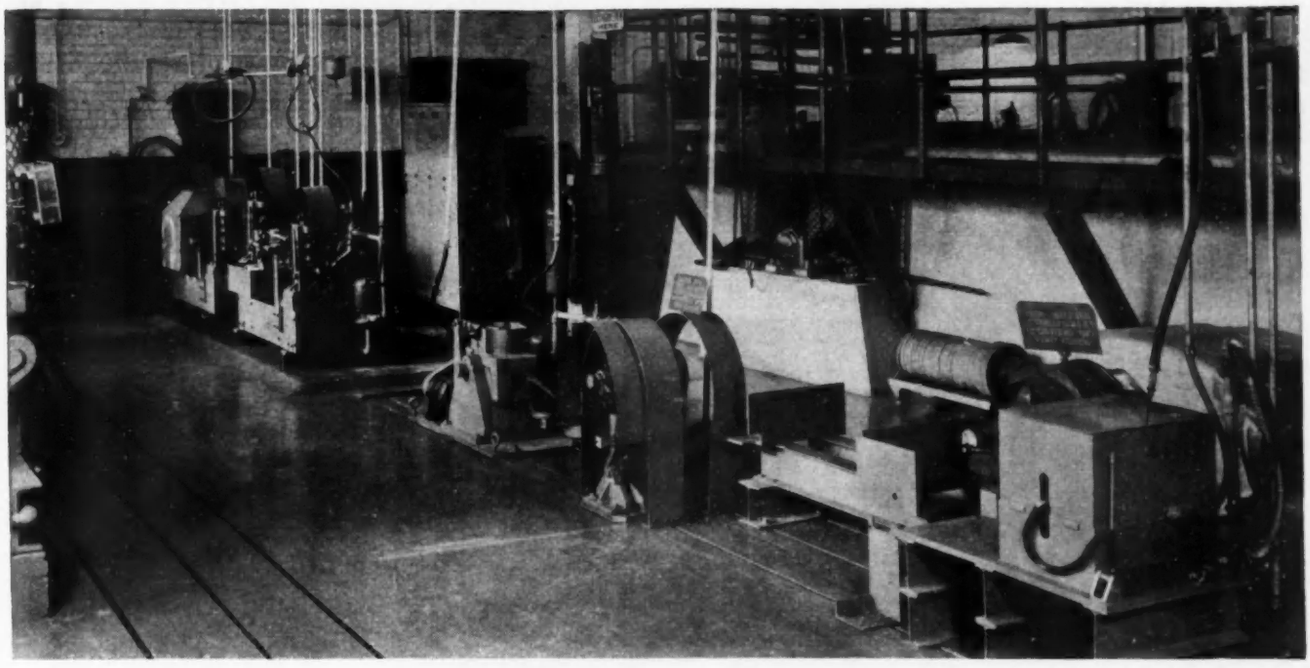
Working with an electric motor manufacturer, Sanders' Garage Superintendent Dick Gibb, equipped all trailer units with a 1½ hp motor with a 110 volt AC rating.

Maintenance-wise, they have been an excellent investment since the first breakdown occurred almost four years after the first installation and then the only repair necessary was replacement of worn brushes.

The electric motors run on power from the city power lines. All posts at the Sanders' loading docks are equipped with plug outlets. Since Sanders' trucks ser-

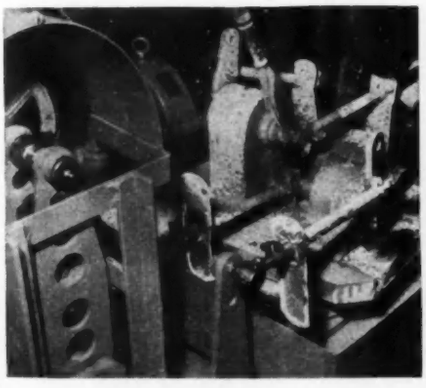
(TURN TO PAGE 132, PEEASE)

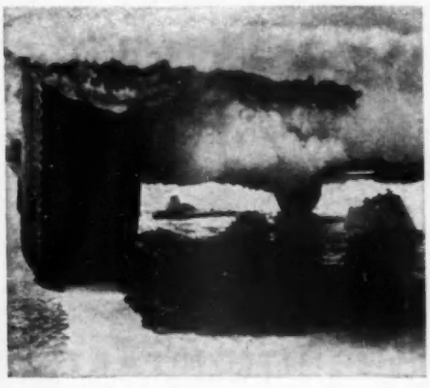
# This is a Modern Torture Chamber



**THOMPSON MAINTAINS THIS "TORTURE CHAMBER"** in their Detroit laboratories to "performance-test" steering-linkage units under the most extreme conditions . . . tests that reveal the slightest imperfection.

Every one of these machines shown above faithfully duplicates difficult road conditions: gritty mud . . . dirty water . . . grinding friction . . . and jarring impacts, as frequently as ten 500-pound blows *per second!*





**DOUBLE-Tested**—Week after week, 24 hours a day, extra-severe punishment is dealt out to Thompson's experimental and standard tie rods, sockets, center links and drag links. In addition to this rigorous testing in Thompson's Detroit laboratories, these parts undergo furthur tests in standard-model cars out on the open road...not only on average highways but also on rutty, muddy back roads as well.

**They MUST Be Right**—Nothing less than perfectly-engineered parts, made of the finest metals, can survive these grueling tests which Thompson sets up in a constant search for *improvement*... in materials, in performance, in manufacturing procedures. New materials, new processes and new designs are all subjected to these rigid Performance Tests... and always under the most extreme conditions.

**The Results?**—These exacting tests . . . followed by periodic skilled analyses by experienced Thompson engineers . . . result in the finest possible linkage systems for America's cars, trucks, buses and tractors.

If you have a steering linkage problem, just write or phone Thompson Products, Michigan Plant, 7881 Conant Avenue, Detroit 11, Michigan, WA 1-5010.

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## You can count on Thompson Products

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# BPR Study Shows How to Improve Braking

Continued from Page 76

### Time-Speed Study

No doubt questions have come to mind concerning the nature and importance of the other maintenance procedures used to improve the performance of the vehicles tested. However, before considering the other maintenance operations, a knowledge of what actually takes place during the stopping of a commercial vehicle with power brakes will be helpful in understanding why certain maintenance operations produced certain results. Fig. 5 is a time-speed record which shows the sequence of events that occur during the stopping of a commercial vehicle with power brakes. There is one period immediately following the instant the braking controls are operated, called "application time," during which the vehicle is not retarded appreciably. This time or distance is required to transmit power to the brake chambers and to overcome frictional resistance in the linkage between brake chambers and shoes and resistance of the brake shoe return springs. The application time is followed by a second period, called the "brake force build-up time," during which the braking force at the wheels is building to a maximum value. The phenomena of application and build-up times are complicated by the fact that they are usually different to some degree on each axle of a vehicle. The time-speed record shows the composite effect of the timing of the forces at the individual axles. The final period of the braking cycle is indicated as "maximum sustained deceleration." It is the period during which the maximum braking force is acting to stop the vehicle.

For the example shown in Fig. 5, the application time is 0.26 sec, the build-up time 0.89 sec, and the period of maximum sustained deceleration 1.44 sec. These times converted to distance traveled are 8 ft, 22 ft, and 14 ft, respectively. It is significant that the combined application and build-up time constitutes only 44.4 per cent of the vehicle stopping time of 2.59 sec but 68.2 per cent of the vehicle stopping distance of 44.0 ft. The importance of reducing application and build-up times to a minimum is readily apparent. If the maximum sustained deceleration of 14.1 ft for second per second could have been sustained from the instant the brake control was first moved, the vehicle stopping distance would have been 30.5 ft.

The phenomena shown by Fig. 5 helps to explain why the simple brake adjustment was so effective in reducing vehicle stopping distances. When the clearance between the brake drum and lining

(TURN TO PAGE 100, PLEASE)

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● Fleet operating costs depend largely on the quality of the parts you use. Keep your costs down by using *Niehoff* Ignition Parts. They're precision-engineered to meet the exacting demands of efficient fleet operation. And you get with each part a warranty of complete satisfaction for 90 days or 4,000 miles of use. So for top performance, economy and efficiency, use *Niehoff* Ignition Parts. A complete line to fit all makes and models of cars, trucks and busses.

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C. E. NIEHOFF & CO.
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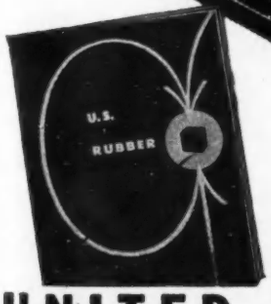
# Protects batteries against vibration damage!

## U. S. Peerless MICROPOROUS Rubber Separators!




Write to address below for free copy of informative booklet on the high-performance, low-upkeep U.S. Peerless Rubber Battery Separators.

The automotive battery takes a lot of vibration and jarring, causing the plates to damage the ordinary battery separator—resulting in shorts and battery failure. But this doesn't happen when the separators are U. S. Peerless. *These rugged separators stand up under vibration, give longer service than any other separator.* They are known as battery savers.

U. S. Peerless has other big advantages: it cannot be harmed by battery acid, heat or plate pressures—will not get mushy or soft in service. High mechanical strength prevents cutting by warped plates or loose plate material. Peerless even *outlasts* the plates. It assures more economical operating costs. In cold weather, it gives 20% faster cranking speed, 10% more power. *Protect your battery investment* by making sure your batteries have Peerless Rubber Separators.

**UNITED STATES RUBBER COMPANY**

US RUBBER

**Electrical Wire and Cable Department • Rockefeller Center, New York 20, N. Y.**

# How to Improve Braking

Continued from Page 98

is excessive the mechanism which spreads the brake shoes needs to move a relatively long distance to apply the brakes. Whenever the clearance between the drum and lining is reduced, the distance the operating mechanism moves is shortened, and the time required to apply the brakes is reduced.

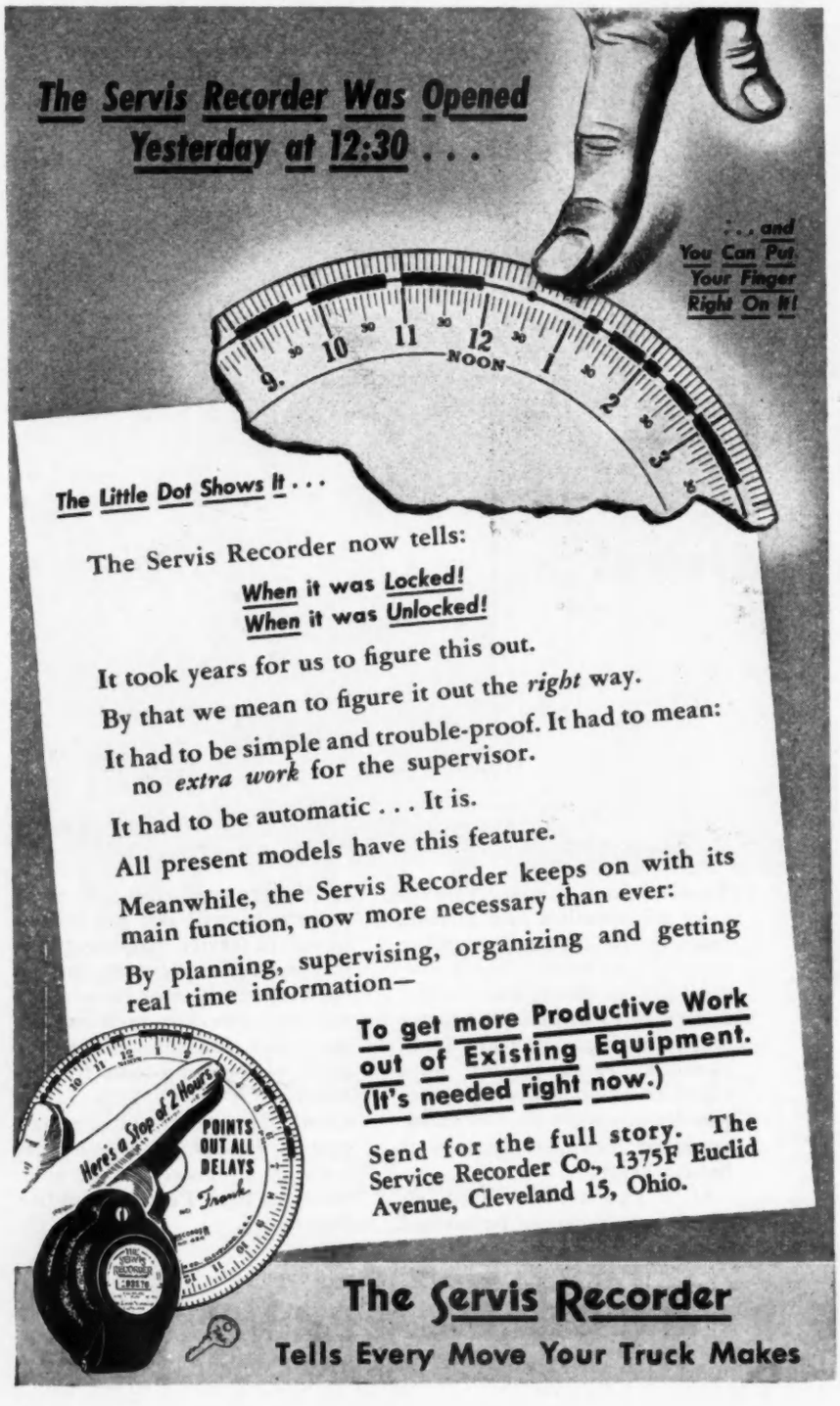
In order to answer questions concerning the nature and importance of maintenance procedures other than the brake adjustment, the corrective actions taken and the number of vehicles on which each action was performed are summarized in Fig. 6 for the 20 vehicles which originally required in excess of 50 ft to stop. There is no standard formula for the improvement of brake performance, as each vehicle requires specialized treatment. Usually the improvement effected required a number of actions, and it was often necessary to combine several of the repairs between road tests, making it impossible to define the relative importance of each individual action. For example, the stopping distance of a truck and full trailer was improved 37.5 per cent, 10.9 per cent by brake adjustment and 26.6 per cent by a major repair job wrapped in one package. This major repair job included an entirely new plumbing set-up that eliminated unnecessary fittings and tubing, installation of a new type foot control valve and the truck and two new emergency relay valves on the trailer, relining of the truck front brakes, and connection of the air line to the front brakes. Incidentally, the stopping distance from an initial speed of 20 mph was decreased from 64 to 40 ft.

Although it is not possible to show quantitative results of the improvements effected by individual repair operations, the information in Fig. 6 indicates that several actions were performed more often than others. Brake adjustments were performed on 19 on the 20 vehicles. The replacement of relay valves and the changes in plumbing set-up are next in order and were usually instrumental in reducing application and brake force build-up time.

## Plumbing Modifications

In replacing relay and control valves and making changes in plumbing on both air-equipped and vacuum-equipped vehicles an effort was made to eliminate, wherever possible, any condition which would tend to retard the smooth flow of air through the system. This was accomplished (1) by installing properly functioning relay, relay emergency, and brake control valves of adequate capacity; (2) by eliminating all street elbows and by substituting straight fittings for elbows of any type wherever possible; (3) by eliminating unnecessary fittings and lengths of tubing; (4) by replacing any tubing which was pinched or kinked; and (5) by replacing tubing of im-

(TURN TO PAGE 102, PLEASE)



The Servis Recorder Was Opened Yesterday at 12:30 . . .
. . . and You Can Put Your Finger Right On It!
NOON
The Little Dot Shows It . . .
The Servis Recorder now tells:
When it was Locked!
When it was Unlocked!
It took years for us to figure this out.
By that we mean to figure it out the right way.
It had to be simple and trouble-proof. It had to mean: no extra work for the supervisor.
It had to be automatic . . . It is.
All present models have this feature.
Meanwhile, the Servis Recorder keeps on with its main function, now more necessary than ever:
By planning, supervising, organizing and getting real time information—
To get more Productive Work out of Existing Equipment. (It's needed right now.)
Send for the full story. The Service Recorder Co., 1375F Euclid Avenue, Cleveland 15, Ohio.
Here's a Stop of 2 Hours
POINTS OUT ALL DELAYS
The Servis Recorder
Tells Every Move Your Truck Makes

# "...over 1,000,000 trouble-free miles in '53 with T5X"

***Warren L. Williams, president of Williams Freight Line, Inc., Portland, Oregon***

"Last year our nine Cummins diesel-powered KW's piled up a total of more than a million miles using Union's T5X motor oil.

"During the hot summer months when we're busiest hauling cattle, some of our units log as much as 21,000 miles per month over every kind of road to be found from Idaho to California. Yet in spite of rugged road, climate and dust conditions, we average 4,500 miles between oil changes with T5X."

You're bound to profit by using this amazing *purple* motor oil in your rigs, too. Call your nearest Union Oil representative for prompt delivery of T5X.

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OF CALIFORNIA

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## How to Improve Braking

Continued from Page 100

proper diameter with larger or smaller diameter tubing, as necessary. These actions are not necessarily listed in order of their relative importance as it will vary, depending on the needs of the individual vehicle.

### Elimination of Restrictions

To hold the application and build-up time to a minimum the air must travel through the lines at high velocity. Whenever the smooth inner surface of a line is interrupted or its cross sectional area is abruptly changed, a certain amount of resistance is offered to the rapid flow of air through the line with a resulting increase in application and build-up time. The ordinary pipe street elbow is one of the worst offenders among the fittings which retard the rapid flow of air through a brake system, yet it is very commonly found on vehicles in the everyday traffic. The opening in the small end of a ⅜-in. ordinary street elbow is no larger than the inside diameter of a piece of ¼-in. pipe, and the opening in the small end of a ¼-in. street elbow is no larger than inside diameter of ⅛-in. pipe. If an elbow must be used, the regular pipe elbow with a close nipple will offer less restriction than the street elbow; but an elbow having a machined inner surface, such as the brass fittings specifically designed for use with copper tubing, is preferable.

Wherever a straight fitting and a fairly long radius bend in the connecting tubing can be used in place of an elbow, there will be some small increment saved in the application and build-up time. If a fitting can be eliminated completely another small increment of time will be saved. An example of what can happen when elbows are eliminated is illustrated by the work done on a 2-axle truck tractor with 1-axle semi-trailer and 2-axle full trailer equipped with air brakes. Fifteen elbows of various types were removed from the braking system of this vehicle. Straight fittings were substituted for some, and some were completely eliminated. From 20 mph the stopping distance was reduced by 4 ft, from 30 it was reduced by 9 ft, and from 40 it was reduced by 16 ft. This much improvement is probably not typical of the results which will be obtained by merely removing 15 elbows from a braking system. However, it is a specific example of what has been done. In general the most improvement will be made by removing the restrictions through which the greatest amount of air must pass. In other words, an elbow between a relay valve and a brake chamber would tend to retard brake action considerably more than the same type of elbow in the service line on the top of the relay.

Worth-while savings can sometimes be effected by eliminating unnecessary lengths of tubing.

**END**

**Please Resume Reading Page 77**


Improved GOVERNOR Performance AT INCREASED ENGINE SPEEDS

CONTROL CAM Precision

The patented control cam of a Vari-Speed Governor is the element which provides its inherent stability throughout the range of governed speeds. Its contour, therefore, is vital to governor performance.

Cam contour is no longer a theoretical problem. A master cam is designed mechanically on the engine by the use of an ingenious device developed in K.S. Research that is both positive and precise. Interchangeable shims of varying height are manipulated until the most effective contour is established to satisfy specific governor requirements. The cam is then machined precisely to the contour of the developed master.

The precisely contoured cam is one of the factors which have improved K.S. Governor performance during the trend toward higher engine speeds.

KING-SEELEY CORPORATION

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# GRIND VALVE SEATS FASTER CHEAPER

## with your B&D Vibro-Centric* Seat Grinder

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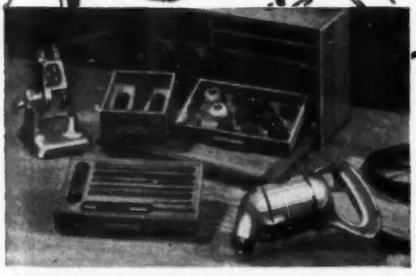
Positive vibrating action lifts grinding wheel from stone once every revolution, prevents stone loading, reduces stone wear. Concentric grinding action assures correct alignment around entire valve seat. No "rigging" required. Job is done in seconds.

This speed saves fleet owners money! Trucks and buses go in and out of the shop fast . . . yet are kept in top operating condition. Costing only $53.00, complete, the B&D Vibro-Centric soon pays for itself. See it demonstrated at your B&D Distributor. Also investigate other time-, trouble-, and money-saving Black & Decker Portable Electric Tools. Write for catalogs No. 503 and No. 10. Free. Address: THE BLACK & DECKER MFG. Co., 624 Pennsylvania Ave., Towson 4, Md.

## ALL THESE B&D TOOLS WILL SAVE YOU MONEY!



**B&D Vibro-Centric Kit.** All equipment you need for precision seat grinding in one kit ready for on-the-job use. From $103.00

**B&D Deluxe Super Service Valve Refacer.** Obsoletes all others. Takes up to 4" valve head, 1/16" to 11/16" stem. 0° to 90° angles. $385.00.

**B&D Electric Polisher.** Be sure your fleet has A-1 appearance. Cleans, polishes, seals in one operation. Easy to use. From $56.00.

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LEADING DISTRIBUTORS EVERYWHERE SELL

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PORTABLE ELECTRIC TOOLS

* Trade Mark Reg. U. S. Pat. Off.

# 1954 New Truck Registrations by Makes by States*

| STATE AND MONTH | | Autocar | Chevrolet | Diamond T | Dodge | Ford | G.M.C. | International | Mack | Reo | Studebaker | White | Willys | All Others | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | April | 1 | 518 | 1 | 66 | 446 | 102 | 107 | 6 | 1 | 7 | 12 | 12 | 4 | 1,285 |
| | 4 Mos. | 3 | 1,864 | 5 | 344 | 1,688 | 394 | 459 | 24 | 4 | 39 | 65 | 44 | 6 | 4,939 |
| Arizona | April | | 189 | 1 | 50 | 192 | 73 | 62 | 2 | 2 | 17 | 4 | 19 | 3 | 594 |
| | 4 Mos. | | 627 | 7 | 169 | 692 | 243 | 181 | 4 | 5 | 20 | 9 | 32 | 15 | 2,004 |
| Arkansas | April | | 570 | | 54 | 436 | 140 | 109 | 1 | 1 | 13 | 8 | 6 | | 1,340 |
| | 4 Mos. | | 1,940 | 9 | 266 | 1,863 | 618 | 381 | 8 | 3 | 60 | 27 | 38 | 1 | 5,192 |
| California | April | 7 | 1,914 | 16 | 434 | 1,565 | 528 | 361 | 17 | 11 | 69 | 36 | 103 | 57 | 5,116 |
| | 4 Mos. | 28 | 7,102 | 56 | 1,779 | 6,130 | 2,048 | 1,292 | 37 | 40 | 227 | 114 | 390 | 236 | 19,479 |
| Colorado | April | | 268 | 1 | 47 | 222 | 86 | 71 | 4 | 7 | 12 | 9 | 24 | 10 | 761 |
| | 4 Mos. | 1 | 1,088 | 4 | 215 | 913 | 348 | 333 | 18 | 16 | 37 | 17 | 112 | 36 | 3,138 |
| Connecticut | April | 2 | 213 | 7 | 57 | 186 | 54 | 96 | 21 | 1 | 9 | 12 | 18 | 8 | 684 |
| | 4 Mos. | 22 | 685 | 15 | 207 | 609 | 198 | 247 | 54 | 25 | 37 | 31 | 47 | 45 | 2,222 |
| Delaware | April | 1 | 97 | | 10 | 69 | 34 | 27 | 5 | | 1 | 3 | 4 | | 251 |
| | 4 Mos. | 2 | 316 | | 69 | 216 | 106 | 85 | 12 | | 8 | 5 | 12 | 6 | 837 |
| Dist. of Columbia | April | | 57 | | 12 | 62 | 12 | 15 | 2 | | | 5 | 5 | 9 | 199 |
| | 4 Mos. | | 209 | 14 | 44 | 198 | 42 | 59 | 7 | 3 | 3 | 28 | 10 | 20 | 637 |
| Florida | April | | 624 | 18 | 122 | 765 | 190 | 113 | 20 | 7 | 37 | 17 | 111 | 5 | 2,029 |
| | 4 Mos. | 5 | 2,281 | 35 | 511 | 2,555 | 675 | 576 | 106 | 46 | 112 | 147 | 283 | 36 | 7,368 |
| Georgia | April | | 665 | 3 | 180 | 643 | 232 | 297 | 23 | 14 | 72 | 28 | 35 | 2 | 2,194 |
| | 4 Mos. | 4 | 2,867 | 13 | 698 | 2,762 | 816 | 897 | 62 | 43 | 212 | 103 | 91 | 16 | 8,584 |
| Idaho | April | | 163 | | 28 | 161 | 74 | 71 | 6 | | 9 | 3 | 17 | 2 | 534 |
| | 4 Mos. | | 549 | 2 | 129 | 472 | 239 | 177 | 7 | 3 | 23 | 6 | 74 | 9 | 1,690 |
| Illinois | April | 3 | 1,286 | 40 | 240 | 1,052 | 263 | 467 | 5 | 4 | 55 | 36 | 42 | 14 | 3,507 |
| | 4 Mos. | 14 | 4,638 | 184 | 1,026 | 4,190 | 1,008 | 1,838 | 43 | 24 | 195 | 183 | 152 | 108 | 13,603 |
| Indiana | April | 3 | 906 | 7 | 141 | 684 | 172 | 329 | 10 | 8 | 64 | 47 | 22 | 33 | 2,326 |
| | 4 Mos. | 13 | 2,935 | 42 | 656 | 2,628 | 645 | 1,254 | 30 | 36 | 206 | 211 | 77 | 78 | 6,811 |
| Iowa | April | | 607 | 5 | 81 | 598 | 101 | 223 | 3 | 3 | 32 | 8 | 6 | 7 | 1,674 |
| | 4 Mos. | 1 | 2,103 | 25 | 346 | 1,967 | 376 | 852 | 12 | 8 | 96 | 36 | 40 | 20 | 5,884 |
| Kansas | April | | 643 | 5 | 109 | 656 | 163 | 199 | | | 42 | 12 | 13 | 2 | 1,864 |
| | 4 Mos. | | 1,891 | 17 | 292 | 1,778 | 537 | 600 | 4 | 4 | 92 | 34 | 44 | 5 | 5,298 |
| Kentucky | April | 1 | 484 | 5 | 83 | 515 | 122 | 89 | 2 | | 14 | 9 | 19 | 1 | 1,344 |
| | 4 Mos. | 2 | 1,958 | 18 | 286 | 1,800 | 456 | 437 | 17 | 14 | 52 | 56 | 88 | 29 | 5,213 |
| Louisiana | April | | 642 | 8 | 87 | 550 | 138 | 140 | 5 | 3 | 22 | 16 | 15 | 5 | 1,631 |
| | 4 Mos. | | 2,401 | 15 | 443 | 2,275 | 564 | 582 | 19 | 4 | 91 | 48 | 105 | 10 | 6,557 |
| Maine | April | | 144 | 1 | 33 | 138 | 48 | 30 | 3 | | 6 | 6 | 15 | 1 | 424 |
| | 4 Mos. | | 432 | 4 | 113 | 396 | 141 | 102 | 12 | 3 | 25 | 10 | 55 | 5 | 1,296 |
| Maryland | April | 6 | 405 | 1 | 104 | 409 | 129 | 130 | 25 | 2 | 11 | 17 | 9 | 21 | 1,269 |
| | 4 Mos. | 10 | 1,177 | 6 | 397 | 1,072 | 255 | 339 | 56 | 9 | 26 | 40 | 32 | 35 | 3,454 |
| Massachusetts | April | 6 | 401 | 2 | 127 | 496 | 87 | 121 | 30 | 17 | 27 | 25 | 26 | 23 | 1,388 |
| | 4 Mos. | 27 | 1,175 | 14 | 367 | 1,431 | 264 | 328 | 74 | 48 | 68 | 106 | 104 | 72 | 4,078 |
| Michigan | April | 4 | 1,084 | 10 | 227 | 1,198 | 212 | 179 | 18 | 10 | 26 | 39 | 26 | 19 | 3,052 |
| | 4 Mos. | 18 | 4,321 | 46 | 1,036 | 4,492 | 926 | 679 | 40 | 51 | 95 | 134 | 121 | 140 | 12,099 |
| Minnesota | April | | 554 | 11 | 103 | 513 | 126 | 208 | 5 | 5 | 21 | 13 | 11 | 2 | 1,570 |
| | 4 Mos. | | 1,923 | 16 | 375 | 1,882 | 452 | 790 | 21 | 15 | 69 | 29 | 66 | 42 | 5,680 |
| Mississippi | April | | 664 | | 63 | 471 | 158 | 134 | 4 | | 15 | | 13 | | 1,522 |
| | 4 Mos. | | 2,310 | 1 | 245 | 1,904 | 606 | 489 | 10 | | 60 | 5 | 34 | 2 | 5,646 |
| Missouri | April | | 960 | 9 | 124 | 821 | 261 | 255 | 25 | 5 | 32 | 37 | 17 | 7 | 2,553 |
| | 4 Mos. | | 3,150 | 17 | 552 | 2,728 | 854 | 860 | 46 | 15 | 132 | 104 | 65 | 34 | 8,557 |
| Montana | April | | 298 | | 34 | 212 | 85 | 88 | 1 | | 14 | 6 | 25 | 4 | 767 |
| | 4 Mos. | | 711 | 4 | 133 | 623 | 249 | 303 | 9 | 2 | 44 | 9 | 130 | 7 | 2,224 |
| Nebraska | April | | 303 | 5 | 45 | 286 | 77 | 109 | 1 | | 19 | 9 | 16 | 13 | 934 |
| | 4 Mos. | 3 | 1,357 | 38 | 198 | 1,346 | 357 | 564 | 14 | 3 | 44 | 34 | 99 | 33 | 4,090 |
| Nevada | April | | 57 | | 12 | 40 | 18 | 10 | | | 4 | | 5 | | 146 |
| | 4 Mos. | | 174 | | 44 | 188 | 71 | 42 | 5 | | 15 | 1 | 20 | 1 | 561 |
| New Hampshire | April | | 117 | 2 | 39 | 124 | 29 | 33 | 7 | 5 | 3 | 4 | 13 | 6 | 382 |
| | 4 Mos. | 4 | 339 | 2 | 87 | 257 | 87 | 84 | 19 | 7 | 17 | 6 | 52 | 17 | 978 |
| New Jersey | April | 5 | 592 | 13 | 152 | 646 | 225 | 229 | 37 | 1 | 26 | 58 | 20 | 37 | 2,041 |
| | 4 Mos. | 35 | 2,113 | 42 | 566 | 2,188 | 783 | 697 | 171 | 21 | 108 | 187 | 66 | 179 | 7,158 |
| New Mexico | April | 1 | 281 | 2 | 46 | 226 | 93 | 89 | 6 | 1 | 14 | 9 | 28 | | 796 |
| | 4 Mos. | 3 | 639 | 4 | 118 | 578 | 271 | 183 | 38 | 3 | 33 | 32 | 61 | 1 | 2,164 |
| New York | April | 49 | 1,335 | 18 | 456 | 1,263 | 322 | 480 | 78 | 24 | 50 | 81 | 81 | 80 | 4,295 |
| | 4 Mos. | 87 | 4,138 | 70 | 1,538 | 4,220 | 996 | 1,595 | 226 | 65 | 164 | 280 | 286 | 272 | 13,955 |
| North Carolina | April | | 634 | 2 | 85 | 546 | 113 | 96 | 20 | 2 | 22 | 16 | 10 | 2 | 1,550 |
| | 4 Mos. | 4 | 2,416 | 23 | 403 | 2,056 | 551 | 467 | 69 | 9 | 95 | 101 | 67 | 9 | 6,270 |
| North Dakota | April | | 150 | | 38 | 173 | 44 | 89 | 2 | | 5 | | 2 | | 503 |
| | 4 Mos. | | 462 | | 90 | 514 | 137 | 322 | 3 | | 22 | | 26 | 1 | 1,577 |
| Ohio | April | 1 | 1,224 | 8 | 321 | 1,374 | 269 | 491 | 23 | 15 | 53 | 86 | 89 | 20 | 3,974 |
| | 4 Mos. | 11 | 4,189 | 30 | 1,100 | 4,494 | 851 | 1,423 | 89 | 100 | 164 | 307 | 167 | 76 | 13,001 |
| Oklahoma | April | | 572 | | 59 | 513 | 138 | 134 | 3 | 4 | 28 | 11 | 7 | 13 | 1,480 |
| | 4 Mos. | 1 | 2,028 | | 254 | 1,895 | 559 | 460 | 15 | 10 | 65 | 42 | 24 | 28 | 5,379 |
| Oregon | April | 3 | 361 | 9 | 62 | 269 | 124 | 97 | 15 | 1 | 11 | 12 | 24 | 10 | 998 |
| | 4 Mos. | 6 | 992 | 19 | 240 | 957 | 433 | 348 | 37 | 2 | 50 | 30 | 145 | 44 | 3,303 |
| Pennsylvania | April | 3 | 1,000 | 14 | 321 | 1,056 | 244 | 390 | 23 | 15 | 46 | 43 | 29 | 53 | 3,237 |
| | 4 Mos. | 36 | 3,806 | 45 | 1,390 | 3,859 | 858 | 1,615 | 129 | 73 | 163 | 260 | 170 | 230 | 12,634 |
| Rhode Island | April | 4 | 82 | 3 | 33 | 89 | 14 | 24 | 5 | | 5 | 1 | 4 | 3 | 267 |
| | 4 Mos. | 14 | 225 | 14 | 90 | 252 | 42 | 71 | 14 | 1 | 15 | 18 | 8 | 4 | 768 |
| South Carolina | April | | 216 | | 70 | 226 | 38 | 38 | 4 | | 7 | 4 | 3 | 2 | 606 |
| | 4 Mos. | 2 | 1,143 | 3 | 295 | 1,059 | 192 | 175 | 28 | | 40 | 32 | 20 | 6 | 2,995 |
| South Dakota | April | | 158 | 1 | 38 | 134 | 59 | 103 | | | 8 | | 14 | 1 | 514 |
| | 4 Mos. | | 569 | 2 | 107 | 528 | 193 | 369 | | 1 | 28 | 7 | 64 | 3 | 1,871 |
| Tennessee | April | 1 | 656 | 3 | 106 | 611 | 197 | 171 | 21 | 2 | 29 | 121 | 11 | 10 | 1,939 |
| | 4 Mos. | 1 | 2,419 | 6 | 463 | 2,213 | 660 | 508 | 48 | 5 | 72 | 183 | 33 | 19 | 6,630 |
| Texas | April | 10 | 2,597 | 4 | 223 | 1,867 | 486 | 583 | 28 | 6 | 60 | 175 | 54 | 11 | 6,104 |
| | 4 Mos. | 36 | 9,024 | 21 | 1,204 | 7,624 | 1,819 | 1,944 | 85 | 30 | 231 | 470 | 220 | 45 | 22,753 |
| Utah | April | | 132 | | 26 | 89 | 48 | 50 | 2 | | 5 | 4 | 9 | | 367 |
| | 4 Mos. | | 355 | 3 | 74 | 255 | 140 | 135 | 7 | | 13 | 9 | 32 | 9 | 1,032 |
| Vermont | April | | 64 | | 26 | 79 | 34 | 38 | 1 | 2 | 8 | | 17 | 2 | 271 |
| | 4 Mos. | 1 | 186 | 1 | 63 | 231 | 84 | 95 | 9 | 2 | 13 | 5 | 56 | 10 | 756 |
| Virginia | April | 2 | 709 | | 258 | 656 | 162 | 146 | 22 | 6 | 35 | 14 | 23 | 7 | 2,040 |
| | 4 Mos. | 9 | 1,895 | 1 | 544 | 1,975 | 442 | 405 | 58 | 25 | 91 | 63 | 85 | 30 | 5,623 |
| Washington | April | | 338 | 2 | 88 | 315 | 111 | 66 | 4 | 1 | 7 | 3 | 19 | 6 | 960 |
| | 4 Mos. | | 786 | 6 | 321 | 803 | 365 | 269 | 13 | 5 | 27 | 9 | 59 | 34 | 2,697 |
| West Virginia | April | 1 | 231 | 1 | 46 | 239 | 57 | 51 | 4 | 1 | 6 | 3 | 24 | 1 | 665 |
| | 4 Mos. | 5 | 830 | 7 | 213 | 750 | 248 | 174 | 10 | 2 | 21 | 19 | 67 | 17 | 2,383 |
| Wisconsin | April | | 402 | 3 | 88 | 395 | 115 | 190 | 9 | 4 | 16 | 26 | 18 | 19 | 1,283 |
| | 4 Mos. | 2 | 1,693 | 11 | 375 | 1,615 | 392 | 716 | 16 | 19 | 57 | 73 | 79 | 59 | 5,137 |
| Wyoming | April | | 81 | | 15 | 79 | 33 | 35 | 2 | | 4 | 1 | 22 | 2 | 274 |
| | 4 Mos. | 1 | 397 | 3 | 77 | 356 | 130 | 145 | 6 | | 16 | 3 | 82 | 6 | 1,222 |
| Location Not Determinable | April | | | | | | | | | | | | | | |
| | 4 Mos. | | 25 | | | | | | | | | | | | 25 |
| Total | April, 1954 | 114 | 26,548 | 241 | 5,269 | 24,375 | 6,654 | 7,694 | 560 | 191 | 1,088 | 1,088 | 1,145 | 537 | 75,504 |
| Total | April, 1953 | 168 | 33,103 | 314 | 8,894 | 22,936 | 8,485 | 10,011 | 710 | 396 | 2,524 | 1,225 | 1,670 | 695 | 91,127 |
| Total | 4 Months, 1954 | 411 | 93,053 | 920 | 20,550 | 87,477 | 23,721 | 26,906 | 1,839 | 824 | 3,623 | 3,730 | 4,254 | 2,144 | 269,452 |
| Total | 4 Months, 1953 | 551 | 113,584 | 1,060 | 32,631 | 72,928 | 29,762 | 35,195 | 2,251 | 1,286 | 9,252 | 4,055 | 6,794 | 2,650 | 312,021 |

** Data from R. L. Polk & Co.

THEY'RE

# pre-cut to exact size!

Restore bearing clearances quickly...accurately...correctly with

## PERFECT CIRCLE TAPER SHIM bearing adjusters

Check bearing clearances in ⅓ the time with Perfect Circle's

**PLASTIGAGE**

**Over 7 million sold...and not a single failure reported!**

You'll save time and get improved performance with Perfect Circle Bearing Adjusters. They're *pre-cut* to exact specifications, and *tapered* in thickness toward each end for correct radial fit. No hand-cut shim can compensate accurately for excessive main and connecting rod bearing clearance...but Taper Shim Bearing Adjusters assure a precision fit, save time and eliminate a major cause of comebacks! Perfect Circle Corporation, Hagerstown, Indiana. The Perfect Circle Co., Ltd., Toronto, Ontario.

*The sure way to more profitable engine overhauls*

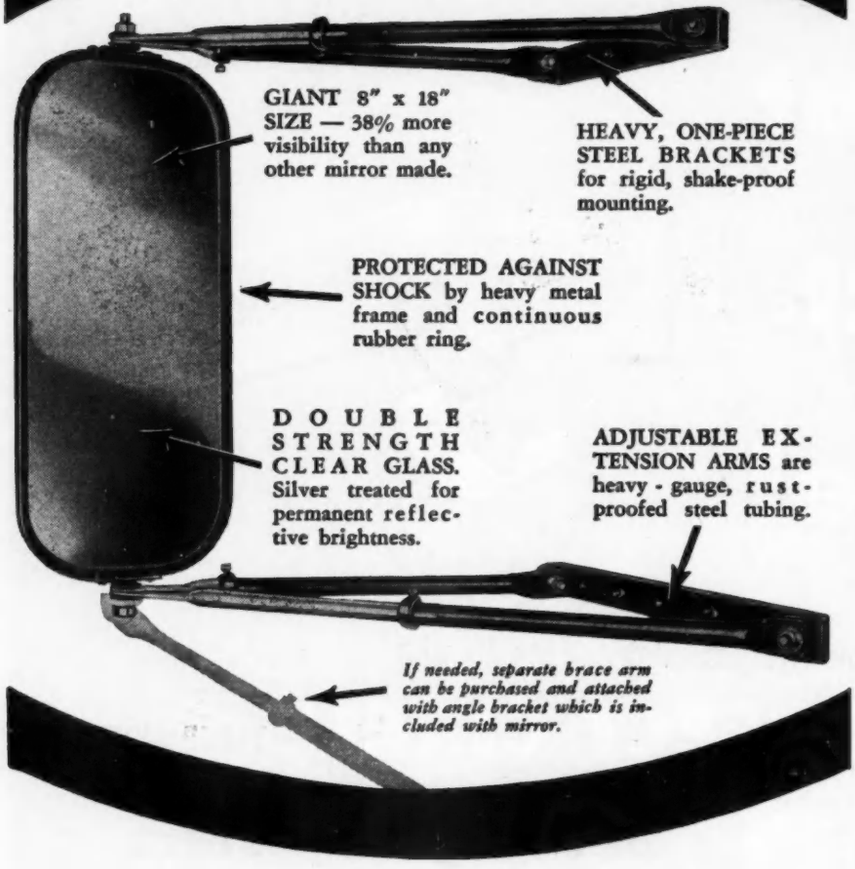
**PERFECT CIRCLE POWER SERVICE**

1. (a) **WEAR GAUGE**—quick, accurate check for top groove wear.
   (b) **MANULATHE**—regrooves worn top grooves.
   (c) **STEEL TOP RING GROOVE SPACER**—restores correct top ring side clearance and retards top ring and groove wear.
2. **PERFECT CIRCLE 2-in-1 CHROME PISTON RINGS**—more than double the life of cylinders, pistons and rings.
3. **NURLIZING**—restores worn pistons to original fit.
4. **PLASTIGAGE**—checks bearing clearances easily and accurately.
5. **TAPER SHIM BEARING ADJUSTERS**—assure correct bearing clearances in main and connecting rod bearings.

# Perfect Circle

**The standard of comparison**

here's the big new **SPARTON TROJAN**
the truck mirror with all
the features you asked for


GIANT 8" x 18" SIZE — 38% more visibility than any other mirror made.
HEAVY, ONE-PIECE STEEL BRACKETS for rigid, shake-proof mounting.
PROTECTED AGAINST SHOCK by heavy metal frame and continuous rubber ring.
DOUBLE STRENGTH CLEAR GLASS. Silver treated for permanent reflective brightness.
ADJUSTABLE EXTENSION ARMS are heavy-gauge, rust-proofed steel tubing.
*If needed, separate brace arm can be purchased and attached with angle bracket which is included with mirror.*

Surveys showed that long-haul truckers everywhere want the visibility, permanency, and mounting features Sparton now offers in its great new Trojan rear vision mirror. It's big enough to sight into instantly without robbing attention from the road ahead. It provides the most practical and rigid means of mounting yet. Taking the place of four conventional "feet" are two one-piece brackets, made of 3/16" x 1¼" cold rolled steel, that take abuse and won't break loose. Rubber ring and heavy steel frame protect the Grade A mirror's edges against impact and the entrance of moisture — allow for easy replacement of the glass if shattered by a frontal blow. Mirror's edges are carefully and specially sealed to resist peeling and deterioration. Bolts and nuts are cadmium plated; all other metal parts are bonderized and baked enamel finished.

The Trojan is available now at leading jobbers and dealers everywhere — ask to see it today, or write!

THERE'S A COMPLETE LINE OF NEW SPARTON HEAVY DUTY TRUCK MIRRORS

*Adjustable and Extendible.
*4" x 8" and 5" x 9" Rectangular styles.
*6" Round
Plain and Diminishing Types.
*Replaceable Heads and Glass.

Sparton AUTOMOTIVE
Division of THE SPARKS-WITHINGTON COMPANY | JACKSON, MICHIGAN

## Ultra Modern Bus Shop...

Continued from Page 71

when lowered and their smooth straight box sides eliminate the possibility of workers getting toes or fingers caught.

### Pit Facilities

Facilities in the pits include an outlet pipe into which waste oil can be drained direct by way of a shallow funnel on a cradle attachment, underfloor sumps, ducts to accommodate tubular heating pipes, lubricating oil, grease and compressed air feed pipes, etc.

Artificial lighting in the pits is supplied by 3-ft fluorescent tubes in gas and flame-proof aluminum housings which incorporate armor-plate glass. Low-wattage coil heaters under the pit floors maintain a comfortable working temperature.

END

Please Resume Reading Page 72

## Available's "Term-O-Bile"

Continued from Page 82

A major design feature is the adoption of the Fuller torque converter designed to eliminate most of the usual gear shifting. It is of two-stage type with torque multiplication of 2 to 1 and fitted with a Young radiator heat exchanger for cooling. The converter is employed in conjunction with a 13-in. single-plate clutch and a five-speed transmission with direct in fifth and one reverse gear.

### 18,000-lb Axle

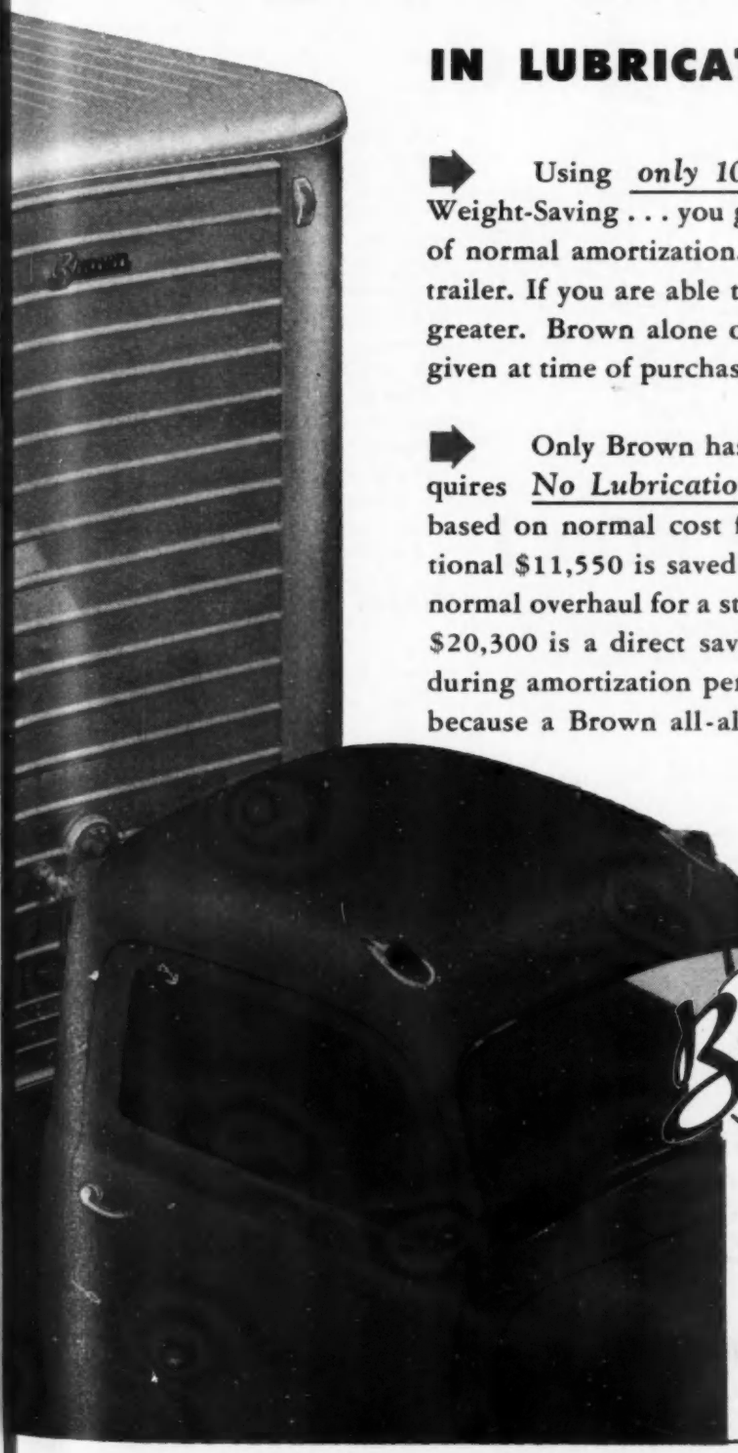
The front axle is rated at 6000-lb capacity and has 16 by 2¼-in. brakes. Rear axle is of double reduction type—8.28 to 1 ratio, and it is rated at 18,000-lb capacity. It is fitted with 16½ by 5-in. brakes.

The vehicle is equipped with full air brakes on all wheels as well as air for the trailer brake connection.

END

Please Resume Reading Page 94

# $63,000 IN REVENUE
# YOU SAVE $20,300
## IN LUBRICATION AND MAINTENANCE



➡ Using *only 10%* of a Brown all-aluminum Trailer's Weight-Saving . . . you gain $63,000 in revenue during the period of normal amortization. This is based on 120 trips per year per trailer. If you are able to load to near capacity, your gain is even greater. Brown alone offers a *Weight Specification Guarantee* given at time of purchase and backed by a bonafide cash offer.

➡ Only Brown has the Tandem Axle Suspension which requires *No Lubrication* — assuring you a savings of $8,750 based on normal cost for servicing every 3,000 miles. An additional $11,550 is saved on cost of tandem maintenance, based on normal overhaul for a standard type tandem every three years. This $20,300 is a direct saving in lubrication and maintenance costs during amortization period. And these savings continue for years, because a Brown all-aluminum Trailer never actually wears out.

*Figures from Operators' Actual Studies*

***Write for Complete Data***

**BROWN TRAILERS, INC.**
SPOKANE • **TOLEDO** • READING

Brown aluminum trailers

Dept. CC-7 . . . Box 873 . . . Toledo 1, Ohio

☐ Mail us more about Brown Weight Specification Guarantee.

☐ We have a special problem; have Sales Representative call.

Name_____ Title_____

Company_____

Street_____

City_____ State_____

# Trailer Rebuilding Saves Fleet Over 25%

Continued from Page 73

longer door life without even minor repair.

Another door innovation which has been paying off for us in longer door life has been the use of a 12 by 12-in. metal gusset on the frame of the door at each corner and on both sides of the frame.

In the past we have had a good many cases of the rear doors of a trailer coming open with resulting losses. We now have a guarantee against such a loss which we make at the time we modernize our trailers. A small but stout chain is welded to the trailer hitch. A standard snap is fastened to the chain; thus the lock becomes a part of the trailer. This safety snap is always where it is convenient to use, prevents the door handles from coming open. In the nearly four years since we have been using this homespun precaution, we have had not one case of a door coming open.

## Comparative Costs

ON TEN average rebuilding jobs our average labor, per trailer, ran 215 hours, or $490. To this, we add 20 per cent for overhead and 5 per cent for miscellaneous—which we enter as a "nuts and bolts" labor charge—or a total labor charge of $622.50 per trailer.

On these trailer rebuilding jobs, our bill for parts and materials used averaged per trailer $443.77. I am sure that we put into our trailer rebuilding more material and more hours than the commercial shop contracting a similar job.

This gives us a total modernization or rebuilding cost, not including sign painting and lettering, of $1,066.27. Sign painting and lettering runs us on contract about $61 per trailer, and has to be done whether the rebuilding job is done in an outside shop or with our own facilities.

Our cost for labor, parts and material runs approximately 25 per cent under our costs for the trailers we have had repaired at commercial shops, and figured against the estimates which we have received for 1953, which are about as follows:

## Outside Shop Costs

| | Labor | Parts & Material | Total |
|---|---|---|---|
| Remove lining ... | $ 45.00 | .... | $ 45.00 |
| Install new lining. | 216.00 | $170.00 | 386.00 |
| Remove roof & cap | 27.00 | .... | 27.00 |
| Install new roof .. | 48.00 | 75.00 | 123.00 |
| Install new caps.. | 54.00 | 49.79 | 103.79 |
| Build 3 doors .... | 86.00 | 54.00 | 140.00 |
| Remove flooring .. | 27.00 | .... | 27.00 |
| Install new floor .. | 54.00 | 80.00 | 134.00 |
| Install diamond plate ..... | 32.00 | 55.20 | 87.20 |
| Install fir slats ... | 36.00 | 40.00 | 76.00 |
| Install dock bumper | 15.00 | 10.00 | 25.00 |
| Cleaning & painting ..... | 110.00 | 25.00 | 135.00 |
| Install drip mold.. | 27.00 | 9.00 | 36.00 |
| Install holdback .. | 10.50 | 7.50 | 18.00 |
| Install angle iron.. | 7.50 | 3.50 | 11.00 |
| Lights & Reflectors | 27.00 | 25.00 | 52.00 |
| Totals ..... | $822.00 | $603.99 | $1,425.99 |

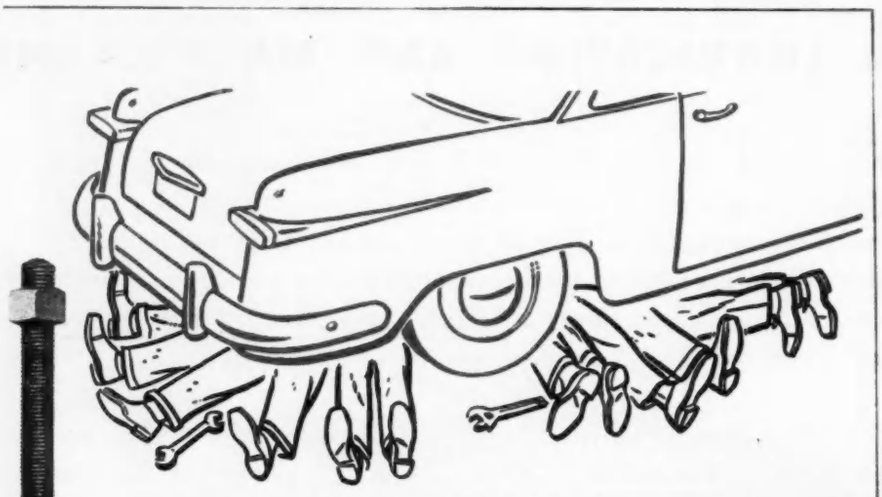
This breakdown on outside costs, both labor and parts and material is made up by taking the figures on two actual rebuilding jobs done at outside shops on two of our 20-ft trailers, and taking two estimates and striking an average for the four.

This gives us, we feel, a very fair outside cost average.

The last 14 trailers which have been completely rebuilt in our own shop, averaged, show a total rebuilding cost of $1,083.58, or a savings over having the work done outside of $342.41 per trailer.

END

Please Resume Reading Page 74

ALL TOGETHER, NOW!

• We don't have to tell garage mechanics what a tough problem it is to pull springs together for re-assembly. Often it takes expensive compressing equipment or six men and a boy to do the job.

But Lamson & Sessions Spring Center Bolts make it easy for you. The ends are pointed for ready insertion and the threads are extra long so you can insert the bolt and pull the spring together by tightening the nut.

Lamson Spring Center Bolts come with slotted heads and in sizes to meet every requirement.

GET IT FROM YOUR JOBBER

For complete information, send for Lamson & Sessions Automotive Catalog No. 53-A.

Lamson & Sessions

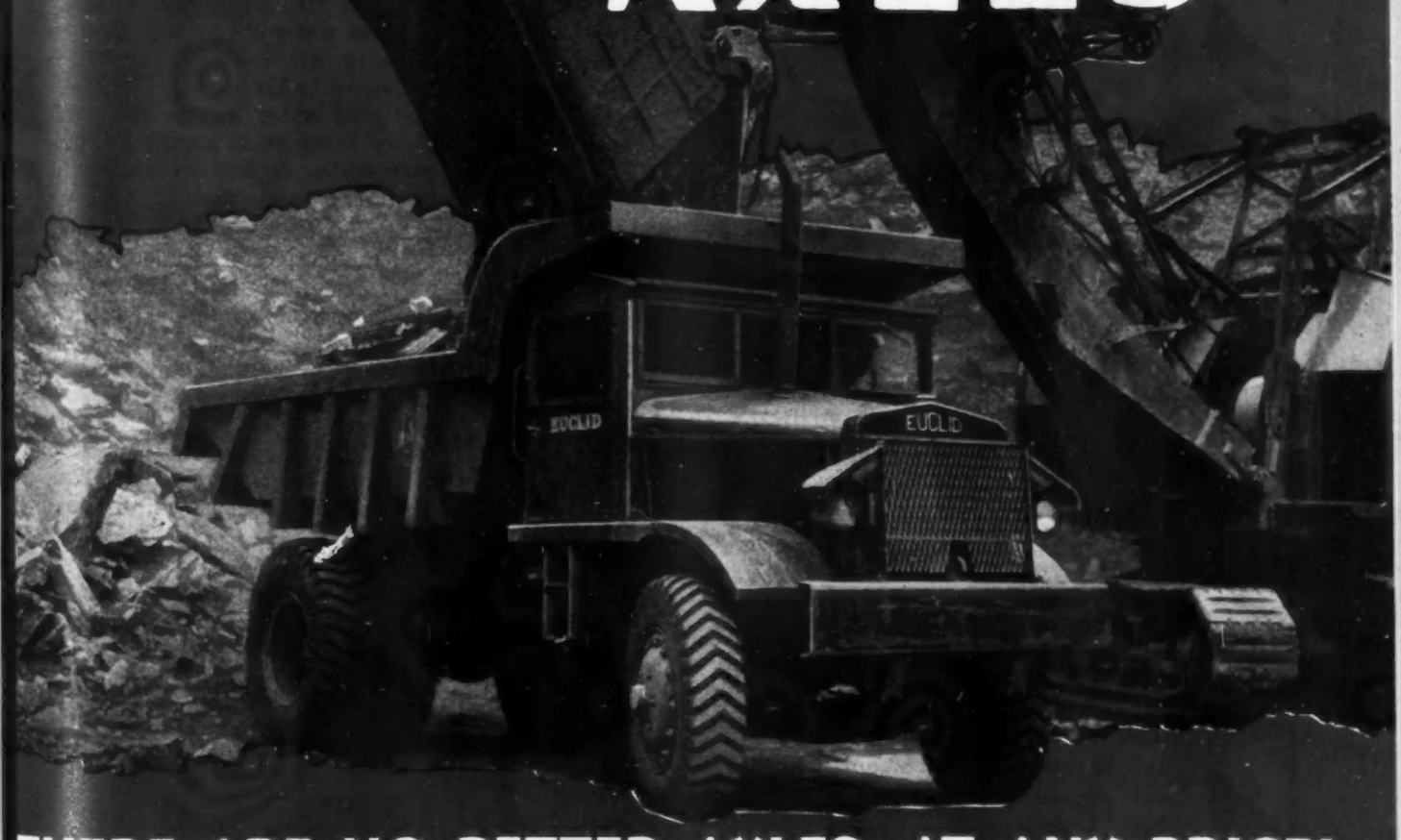
The LAMSON & SESSIONS Co.

1971 West 85th Street • Cleveland, Ohio

Plants at Cleveland and Kent, Ohio • Chicago • Birmingham

CAP SCREWS MILLED STUDS WHEEL BOLTS SEMI FINISHED NUTS TAPPING SCREWS

# EUCLID USES SHULER AXLES




## THERE ARE NO BETTER AXLES, AT ANY PRICE!

Since 1915, Manufacturers of: *One-Piece* Tubular and Square Commercial Trailer Axles, Heavy-Duty Front Axles for Trucks, Busses, and Off-Highway Equipment, Low-Bed Machinery Trailer Axles, Heavy-Duty Vacuum and Air Brakes, Miscellaneous Forgings.

**SHULER AXLE COMPANY, Incorporated, LOUISVILLE, KENTUCKY**

SUBSIDIARY OF FULLER MANUFACTURING COMPANY

SALES OFFICES in DETROIT, CHICAGO, OAKLAND and FORT WORTH

WEST COAST WAREHOUSE
Oakland, California

SOUTHWEST WAREHOUSE
Fort Worth, Texas

# Local Cartage Fleet Gets New Home

Continued from Page 85

trial and error method." Before starting the blueprints, the company took empty oil drums as markers and kept running trucks through in every conceivable manner and angle, until they had their spacing just right. The largest trucks roll through easily, without sacrificing an unnecessary inch of storage space.

### The Garage

The garage measuring 70 x 100 ft was designed for prompt and economical maintenance. Twin double overhead doors front and back give two roll-through lanes, or four storage lanes, as needed.

All auxiliary space is located along one wall. The stock room, which is also the mechanics' phone station, is in the center of this wall. Just outside the stock room is a dual set of door controls permitting the mechanic on duty to open the front doors without crossing the garage floor.

### Washing Facilities

The 36,000-lb capacity hydraulic lift is also right at the stock room door. A pair of heavy waterproof curtains hang where they can be spread to protect the wall when the steam cleaner is used for a greasy job in the left.

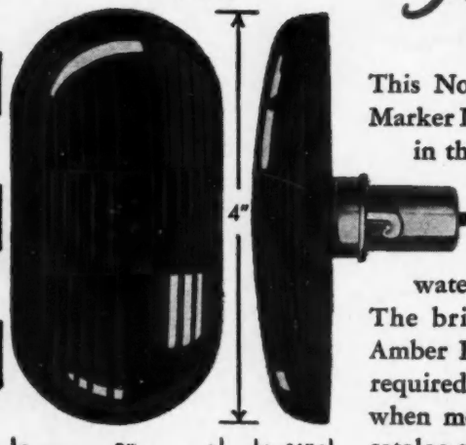
Tough washing jobs can be done on the lift, or near the front doors where a "truck laundry machine" has hot water available at 300 lb pressure. But trucks can be washed anywhere in the garage. Both hot and cold water outlets are positioned every 30 ft around the garage walls, as well as additional compressed air outlets.

Big fluorescent lights are located over the garage service floor. With our rows of trucks stored for the night, each file of lights is above the spaces between the rows of trucks. This gives the night crew perfect visibility in the aisles and around all trucks. It also gives the best possible light *under* the trucks obtainable with overhead fixtures. The lights are high enough to shine

(TURN TO PAGE 114, PLEASE)


THIS NEW **DIETZ** No. 56
CLEARANCE-MARKER LIGHT MOUNTS *Fast... Flush... and Easy!*

No. 56




This No. 56 DIETZ Clearance and Marker Light stays out of trouble even in the tightest spots . . . the shallowest, narrowest construction, yet full 180° visibility. Features a diecast body, water, dust and corrosion-proof. The brilliant, shockproof Red or Amber Lens snaps on — no retainer required . . . completely conceals body when mounted. 6v. or 12v. Ask for catalog page and prices NOW!

**DIETZ** NO. 200 *FLASHING* EMERGENCY LIGHT

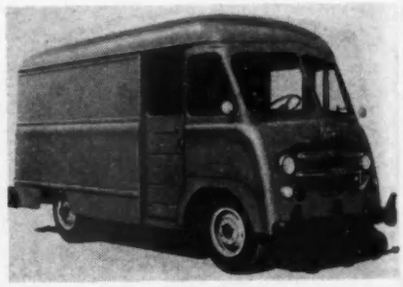
*For All 'Round Safety!*

This new No. 200 DIETZ Light has full 360° visibility . . . mounts without disassembling. Available with Red, Amber or Blue Lenses. Diameter 6". Height 6¼". 6v. or 12v. 50 candlepower bulb. Flasher and Switch included. Ask for catalog page and prices today.

R. E. DIETZ COMPANY • 225 WILKINSON ST., SYRACUSE 1, N.Y.

DIETZ


**Duravan Dodge Body**



**Five new models of parcel delivery truck bodies, rolling off the production lines at Universal Sales Inc., Delaware, Ohio, are designed to mount on the 1954 Dodge forward control chassis. The new models will be known as Duravans and will be available in both wide and narrow sizes and on wheel bases ranging from 104 to 129 in.**

# STEEL-VENT'S *2 Way Action* DOES IT!

**1 REDUCES CYLINDER WEAR**

*Extra Oil-Carrying Capacity* puts more oil on cylinder walls in the wear zone.

**2 CONTROLS OIL PUMPING**

*Extra Oil-Draining Capacity* lets excess oil drain back into the crankcase.

**Two-Way** oil control permits the right amount of oil to circulate the split-second it's needed to protect vital friction zones. The Steel-Vent is designed to meter a generous amount of lubrication up to the compression ring wear zone—holding wear to the absolute minimum.

Steel-Vent design also permits fast drainage of excess oil back to the crankcase. And they can't clog—with every stroke of the piston, Steel-Vents flush away carbon deposits. You'll never see a clogged Steel-Vent.

In hundreds of thousands of re-ring, re-bore and re-sleeve installations, Hastings Steel-Vent Piston Rings have proved they reduce cylinder wear and stop oil pumping.

HASTINGS MANUFACTURING CO. • HASTINGS, MICHIGAN

*Piston Rings, Casite, Caslube, Drout, Oil Filters, Spark Plugs*

HASTINGS

**STEEL-VENT PISTON RINGS**

*Regular or Chrome-Faced*

REDUCE CYLINDER WEAR · CONTROL OIL

## Local Cartage Fleet

Continued from Page 112

across one truck and under the next one.

The service shops are located in the rear corner of the building, handy to both the garage and the storage lot. This contains a grinder, drill press, work bench, and both a test stand and charging bench for batteries.

At the front end of the building is a loading platform with an overhead door on the outer side. This is wide enough so two trucks can park with over half of their rear openings accessible. This makes it easy to transfer loads while protected by a canopy projecting out over the door.

The platform is also open to the interior of the garage, with space for at least three trucks to line up. For a width of six feet the inner edge of this platform is cantilevered on floor joists for its entire length. Thus a lot of space is provided for extra storage of tires.

Running across one end of the platform are the chain lockers. Supplied with heavy shelving, they enable the tire chains to be stored according to size and type. More lockers, on the opposite wall of the building, house general supplies in one corner and greasing and oiling equipment in the other.

### Second Floor

A second floor is 15 ft above the auxiliary space, except over the loading platform. In the northwest corner is an air-conditioned office with windows on all four sides. These include the windows opening onto the upper level of the entrance hall, which is where the chauffeurs check in and out.

Large windows in the three remaining walls give a clear view of (1) the entire service floor in the garage, (2) the larger parking lot at the rear of the garage, including the fuel station, and (3) the full length of the parking space on 18th Street where incoming trucks line up.

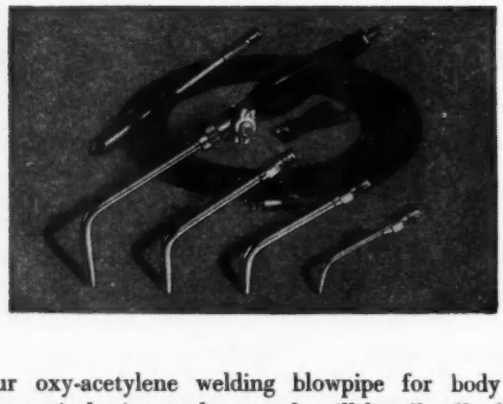
The master control for a two-way loud speaker system is in one corner of the office. Speakers are distributed through the garage, the parking area, fuel station and the locker room. These serve as both broadcasters and as microphones. Thirty feet from one of these units a man can be paged and respond with slightly raised voice, without moving a step.

END

Please Resume Reading Page 86


INSTANT HEAT for Body Soldering

Prest-O-Lite
Trade-Mark
BODY SOLDERING OUTFIT

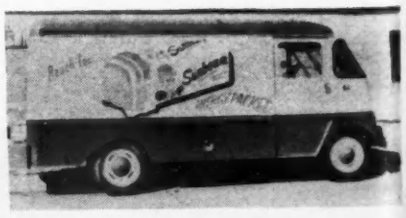


Stop tieing up your oxy-acetylene welding blowpipe for body soldering jobs. This economical, air-acetylene outfit will handle all of your body soldering work and leave your welding equipment free for extra work and extra profits. Just attach the "Y" connection to your acetylene regulator and operate both outfits from the same cylinder. A shutoff valve and built-in pilot flame control insure easy handling and gas economy. Ask your LINDE jobber for a demonstration today. Or write LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y. In Canada: Dominion Oxygen Company, Division of Union Carbide Canada Limited, Toronto.

Get it from your LINDE JOBBER

*The terms "Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.*


### Van-Size, 3-D, Decal



**Sunbeam bread distributors are distributing full-color postcards of the above truck to their customers. Reason is that the three-dimension loaf of bread is a "natural" sales promoter. The multi-color decal is unusual in that it is "van-size." It was developed by Palm, Fechteler and Co., Weehawken, N. J.**

# Muffler ★ Long Life ★ *and* SILENCE

*The release of this series of Heavy Duty Mufflers by the AP Parts Corporation is in accordance with the Truck Noise Reduction Program now being conducted by the American Trucking Association.*

**The American Trucking Association has long pointed out the need for better, quieter truck mufflers. AP now offers you a muffler with all the features you want! It was designed and tested in cooperation with industry leaders and operating fleets . . . it's superior to any you've ever had . . . engineered for *your* trucks . . . backed by 45 years of muffler experience plus extensive field research including testing with officials and members of The American Trucking Association. Here's what the new AP Heavy Duty Truck Muffler does for you:**

- ***It reduces back pressure*** **to a minimum because of its "S-Flow" design and non-clogging extruded holes.**
- ***It lasts longer*** **and lowers cost per mile because of its rugged heavier steel construction.**
- ***It is safer*** **because its all welded construction and precision fitting nipples minimize carbon monoxide danger.**
- ***It is quieter*** **because resonating chambers dissipate objectionable noises—silence complaints of law officers and civic groups.**

**AP Heavy Duty Truck Mufflers are available for most trucks including diesels. Contact your AP wholesaler or write us today for free catalog and full information.**

THE AP PARTS CORPORATION
1151 AP Building • Toledo 1, Ohio
*Manufacturers of:* MUFFLERS • PIPES • MIRACLE POWER • dgf 123

© The AP Parts Corp., 1954

# LP Gas Saves 1½c per Mile

Continued from Page 81

changing of fuel pumps every 10,000 miles on gasoline engines. In this respect, material savings alone cut his costs by $80 for every 100,000 miles.

Formerly, 10,000 miles was Mistletoe's allowable limit on spark plugs. Their units now get at least 20,000.

### Tire Wear Decrease

Strange as it may seem even tire wear has decreased since the fleet switched to LP operation. In 1953, Ward reports his tire costs were down one mil per mile. He accounts for this with the explanation that LP units will not accelerate as fast as those driven on gasoline. This means that the pull on the tires is more even and that the spurts which wear into the rubber are eliminated.

This inability of LP to produce the sudden power which gasoline does, Ward says, calls for a definite breaking-in period for drivers who are assigned to new LP units. However, this lack of sudden power, he says, is compensated for by the fact that LP engines will not flood like gasoline engines.

### Less Fuel Cost

All of the above, it is important to note, is qualified by the fact that Mistletoe operates in a territory in which there is a distinct price advantage to LP fuels over gasoline. The cost of gasoline, as this was written, was averaging 21 cents a gallon as compared with 12 for LP fuels.

As a rule, operators figure on 10 per cent less mileage on LP, but Ward reports he has been able to bring his converted engines to almost equal mileage through special care in rebuilding the engines to handle the gaseous fuel. Fuel mileage on Mistletoe units loaded to an average gross weight of 39,000 lb has been right around 5.6 miles per gallon.

### Does Own Conversion

To get this kind of performance, Ward accounts for the special properties of the fuel in his conversion of new gasoline units. All conversion jobs are done right in the Mistletoe garage. This firm does not buy any factory-equipped LP units.

Mistletoe converted units are increased from a 6.5 compression ratio to 7.4. High dome pistons are the chief factor in this buildup. Other changes include the installation of dual points in the ignition system, an Ensign carburetor, and two 60-gal saddle tanks which can be loaded to a maximum of 50 gal in each. Another important feature is the installation of an Ellis manifold, which keeps the engine cooler and actually steps up fuel mileage by an estimated 5 per cent.

END

Please Resume Reading Page 82

# Why ARROW Class "A" Signal Sets Are Your Best Buy Today

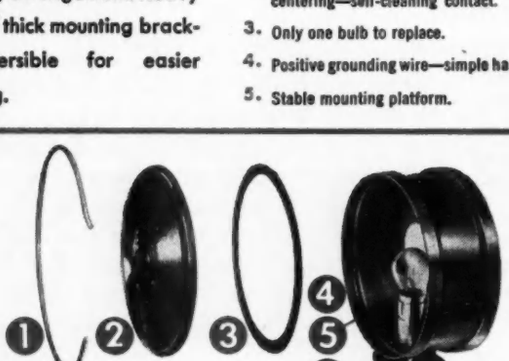
New Arrow "Cab-Master" Switch

Just the right length for fingertip control. Flips in place with positive, "feel it" action. Positive proof—if the pilot light blinks, you could testify in court your lights were working.

**SIMPLY AND STRONGLY MADE**

Nothing to burn or wear out—nothing to cause trouble. Unbreakable handle of ¼" steel rod. Adjustable 2-screw mounting arrangement. Heavy duty ⅛" thick mounting bracket, reversible for easier mounting.

1. Heavy-duty phosphor-bronze contacts, lubricated for double life.
2. Wide, heavy leaf spring for positive centering—self-cleaning contact.
3. Only one bulb to replace.
4. Positive grounding wire—simple harness.
5. Stable mounting platform.




1. Simple snap ring for bulb replacement.
2. Stimsonite fluted lens—the finest optical quality.
3. Unbreakable gasket material—you never have to replace it.
4. Rimless construction, rustproof shell.
5. No reflector to dull, corrode or get in the way of bulb replacement.
6. Solid 1½" square mounting platform.
7. 30 to 50% lighter weight.

**ARROW MAGNALITES** always assure the same light output—they're so powerful they need no reflector. The finely made lens is fadeproof—will not crack, craze or draw. Sturdy, rustproof steel shell. Available in double-faced, single-faced or flush-mounted models.

BE SURE TO SEE YOUR ARROW JOBBER TODAY

ARROW

SAFETY AFTER DARK

Arrow Safety Device Company . Mount Holly, New Jersey

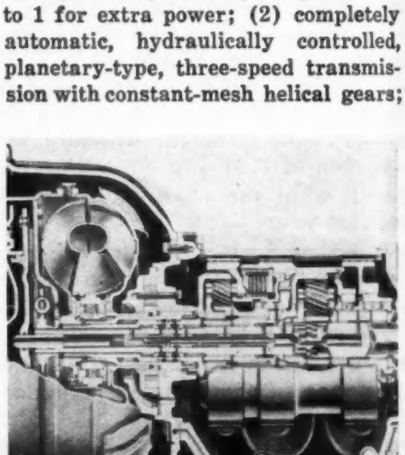

# IHC Offers Automatic Shift

INTERNATIONAL HARVESTER CO. has announced a new three-speed, completely automatic transmission suited for multi-stop delivery service as optional equipment in International Model Nos. RM-120 and RM-150 series trucks.

The automatic transmission, called "Metro-Matic," was engineered specifically to increase efficiency and economy of retail delivery operations.

## Three Features

Features of the new transmission include (1) torque converter coupling for smooth transfer of power, which multiplies engine torque up to 2.16 to 1 for extra power; (2) completely automatic, hydraulically controlled, planetary-type, three-speed transmission with constant-mesh helical gears;



and (3) a direct drive that locks out the converter and allows engine torque to be transmitted directly to the rear axle for greater fuel economy in high gear, completely eliminating the "slip" or engine over-run commonly associated with converter or fluid coupling drives.

Operation of the truck equipped with the new automatic transmission is characterized by simplicity and the full measure of control the driver exercises over engine speed and vehicle motion at all times.

## Easy Control

With the safety drive selector lever on the steering column in normal drive position, the driver controls the full range of speeds with only accelerator or brake pedal. This includes down-shifting for rapid acceleration when required.

# Cargo Pilferage Costs Millions

Continued from Page 91

selection, based on a standard employment application and a personal interview, is important. Every applicant is questioned and graded on the same basis so as to eliminate bias on the part of the interviewer.

Questions have been included to obtain data on the applicant's attitude, his motivations, his desires and needs. His liking and enthusiasm for the job are considered. Applicants heavily in debt are often rejected as poor risks.

The record as established by the application and interview is then subjected to a thorough investigation. Especially important are past driving and criminal records. More is learned about the applicant through ex-employers and neighbors. If accepted as a new employee, the applicant is further checked to be sure he measures up to expectations. Usually within a month, he is either a proven employee or an ex-employee.

### Clerical Procedures

Theft discouraging clerical procedures are necessary. At Western Express they are geared to a similar program for physical handling of the goods. Basic approach was to devise such systems so that any loss is immediately apparent. If a potential thief knows that a careful system is in effect, he will not be so quick to take something. When the loss is immediately apparent, it makes possible quick detection of the culprit.

Freight picked-up from shippers is checked against bills of lading and against a separate summary listing of pick-ups. As drivers and dockmen unload the freight, it is checked against both the bill and the summary.

As fast as carrier's bills are made out, they are listed on the manifest. Copies of the bills also are split at once, one being sent to the general office and one to the destination terminal. When the freight arrives at destination, it is checked against the bill and the manifest. After deliveries are made, the receipted bills are checked again against the manifest.

Each movement of freight, whether from truck to truck or to some other location on the dock, is noted on the freight bill which is checked in and out of the dispatch office.

When any discrepancy is noted at any check point in this procedure, it is reported to the responsible person immediately. A similar check system has been established for cash given to or collected by drivers.

### Good Habits

Western Express's program also aims to eliminate hiding places for stolen freight through good housekeeping. Freight is moved prompt-

(TURN TO NEXT PAGE, PLEASE)

you can cut maintenance costs by saving man-hours

WITH HYPRESSURE Jenny STEAM CLEANER

Model "1206"—120 Gals. per hour capacity. One of 80 JENNY types for your needs.

Besides cutting maintenance time and labor expense by cleaning equipment *10 times faster . . . and better,* than any other known method, Series "1200" Hypressure JENNY Combination shortens vehicle repairs as much as 40% by removing the muck, dirt and grease that slow mechanics down and run up costs. Combination JENNY cleans motors . . . chassis . . . wheels . . . springs; removes sand and grit from lubrication fittings; reverse flushes complete cooling systems—radiator, motor block and heater; keeps floors . . . walls . . . pits . . . lifts . . . tools and equipment clean for safe, efficient, economical shop operation.

*For complete information on how Series "1200" Hypressure JENNY Combination can cut maintenance time in your shop by saving man-hours and speeding repairs*

**MAIL THE COUPON TODAY!** No obligation.

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"Serving Since 1892"

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## Pilferage Costs Millions

Continued from Page 121

ly and, where possible, directly from pick-up truck to road trailer. This minimizes exposure to theft, prevents burying a piece of freight for theft later.

Trailer seal numbers are recorded in a seal record book, on the manifest, trip sheet, checkout form and dispatch sheet. This prevents possibility of breaking the seal, stealing freight and replacing another seal after the trailer is loaded.

City drivers, in addition to the pick-up checks prescribed above, are repeatedly warned to keep their loads concealed by tail tarps, end gates or closed doors to lessen possibility of theft.

Terminal security does not permit parking of automobiles within the fenced yard. To supplement watchman service and burglar alarms, a night patrol keeps check on all buildings from the outside. It also drives around trailers parked on the lot, following no fixed route or time schedule.

Freight losses are investigated immediately. All persons handling the freight are quizzed closely.

By following this plan (briefly outlined here), Western Express feels they are dealing with employees, 99 per cent of whom are honest. The remaining one per cent and potentially dishonest outsiders are discouraged by (1) enhanced possibility of detection, (2) difficulty of stealing, and (3) minimizing of theft temptation.

### Anti-Theft Devices

On the market today to aid fleetmen in their efforts are several devices especially designed to cut theft losses. Most common of these are good hardware. Hinges, door locks and hasps should be strong and in good condition. One special locking device available permits the delivery door to be locked by slamming it shut and makes it impossible to open until the driver operates a push button switch that can be hidden anywhere on the truck.

Various automatic alarm systems are manufactured that—when installed on a vehicle — cause an alarm or siren to sound until shut off with a special key, usually not available to the driver. Some features of these units include: (1) completely self-contained units so they cannot be shut off by disconnecting from the vehicle's battery, (2) a "parker" feature, permitting the unit to be set and the vehicle left unattended with the alarm sounding should any unauthorized attempt be made to enter or move the vehicle, (3) a provision that once the alarm or siren is turned off, the key used to do so cannot be removed unless the alarm is re-set, (4) a foot-button alarm switch for the driver, (5) automatic ignition cut-off effective when parked, and (6) Underwriters Laboratories approval.

Where units are to be padlocked and sealed, special locks are available. When the shackle is closed, a slotted rod protrudes from the bottom through which a seal may be fastened. The lock then cannot be opened without breaking the seal.

(TURN TO PAGE 124, PLEASE)


3 Welcome Newcomers To The E Line

EBERHARD SPRING LOADED CENTER CASE SLAMLOCK NO. 5648-5649

"Slamtite" Medium Duty

EBERHARD ALUMINUM ALLOY HINGES 356T6 (HEAT TREATED) NO. AL-6

This new rust resitant aluminum hinge will be welcomed for its distinct weight saving feature without sacrifice of strength.

Hinge strap equipped with brass hinge pin insert. Hinge pin is steel, cadmium plated. Cadmium plated brass truss washer between hinge strap and butt assures maxium wear resistance and minimum friction.

Tapered Bolt Pulls Door Up Tight.

NO. 5649 Includes finger hook latch bolt as shown.

SPRING LOADED CENTER CASE ELIMINATES SAG OF HANDLE WHEN MOUNTED IN A HORIZONTAL POSITION.

NO. 5648 Does not include finger hook latch bolt.

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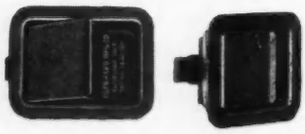
DOOR IRONS
DOOR CONTROLS
DOOR HOLDERS
SEAT IRONS
LOCK HANDLES
SEAT PEDESTALS

LOCKS
REFRIGERATOR
PANEL DOOR
VAN BODY
SLIDING DOOR

ROPE HOOKS
LADDER HOLDERS
ETC.



EBERHARD JUNIOR SIZE, PADDLE HANDLE RECESSED DOOR LOCK NO. 4890 (Slightly Smaller than No. 4879)

Slam action, single point engagement. Handle is hand operated. Neat and easy to install on right or left hand doors.

WRITE FOR DETAILED CIRCULAR

EBERHARD Long Run TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Co. EVARTS AVENUE CLEVELAND, OHIO

# "VICKERS® Hydraulic Power Steering Helps Improve Our Operation"

## . . . Says Jacksonville Coach Company

"We are very much pleased with the Vickers Hydraulic Power Steering which we have on our Series 200 White Diesel Buses," writes J. M. Moore, Vice President and General Manager, Jacksonville Coach Company. "As of March 1, 1954 these 20 buses had a total of 2,006,010 miles.

"The better maneuverability resulting from this power steering helps maintain schedules as the buses get through city traffic much easier . . . it also often helps avoid accidents. The reduced driver fatigue is reflected in improved safety records. Also, the driver has no fear of loss of control resulting from a front tire blowout. Power steering is a refinement we propose to incorporate on all future equipment."

For all the facts about Vickers Hydraulic Power Steering, ask for new Catalog M-5101.

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6218

Vickers Hydraulic Power Steering Booster does the actual work of steering. With the touch of only a finger the driver can steer the heaviest vehicle on or off the road. All road shock is absorbed by Booster and transmitted to the vehicle frame . . . there can be no kick-back at the steering wheel. Fatigue is reduced and driver efficiency increased.

**VICKERS hydraulic**
**POWER STEERING**
**is Effortless**
**Positive and Shockless**

## Pilferage Costs Millions

Continued from Page 122

Larger locks—steel castings with a forged shackle—snap around the kingpin on the trailer fifth wheel to prevent a thief from backing in his own tractor and hi-jacking an entire trailer load.

### Cooperative Groups

In cities or other areas where opportunities for cargo theft are concentrated, for-hire and private truck operators can join together in cooperative groups to cut down theft loss. Since 1943, the Philadelphia Chapter of the Pennsylvania Motor Truck Assn. has had a Theft Prevention Division. It is headed by a former chief of city detectives, James P. Ryan. The service includes armed guards for busy terminals and unmarked cars equipped with short wave radio for night time patrol. Biggest benefit comes from having an organization devoting full time to keeping track of truck and cargo thefts, watching dealers in stolen merchandise, spotting organized gangs at work.

Just last fall, 14 motor carriers in Los Angeles, members of the Motor Truck Assn. of California, formed a Theft Prevention and Security Division. Four paid detectives are now surveying the situation in the area.

### Law Enforcement Officials

Cooperation with the activities of local and state police, FBI and Treasury officials is another part of a successful theft prevention program.

Hi-jacking is a crime that is best solved in the first few hours. The same applies to small theft. Unexplained shortages and suspected thefts should be reported immediately. One important reason for this is that the existence of a large number of similar cases might develop a theft pattern indicating an organized gang at work.

In some cases, truck users have unintentionally hampered the work of the police and FBI. Vehicles involved in thefts should be left as discovered until police authorities have had an opportunity to go over them for clues. If a hi-jacking takes place in Philadelphia, it is of little value to have the fingerprinted trailer in Chicago.

### Do Programs Pay?

Most fleet operators realize that a prevention program is a better answer than collecting insurance on freight stolen. As reviewed in the beginning of this article, there are many costs not compensated for by insurance. They can only be saved by preventing theft. Further, insurance companies are solidly behind effective theft prevention program as a means of keeping insurance costs at a minimum.

Pointing out that insurance costs are based on losses, Liberty Mutual says, ". . . any loss prevention program whether it utilizes burglar alarms, locks or whatever is successful in reducing cargo losses, would automatically reduce cargo insurance premiums."

END

Please Resume Reading Page 92

more
stopping
power
with
HOMAN
DRUMS
FOR CAST SPOKE AND
DISC-TYPE WHEELS
Homan Brake Drums are made of the finest close grain chrome iron alloy for longer, more efficient wear. They are precision machined to insure concentricity, longer brake lining life and to guarantee an even braking surface. Designed and built to dissipate heat quickly and minimize checking.
Homan Drums are a sound investment in preventive maintenance.
For complete details, write today
For Fast
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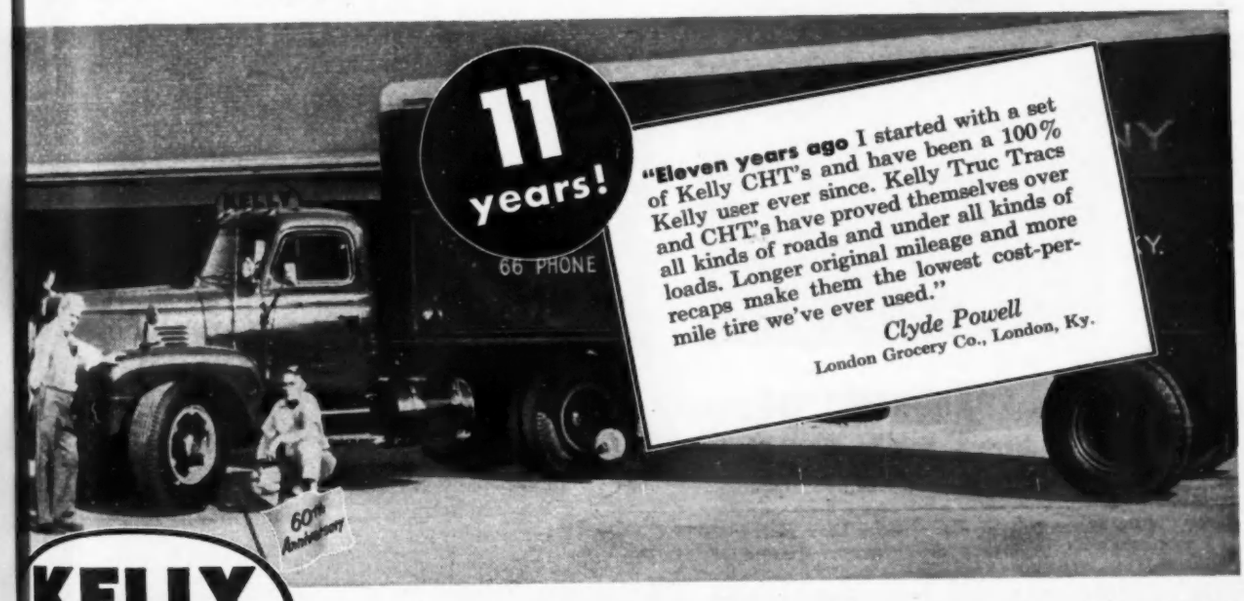
ESTABLISHED 1897

30 years!
"In our wholesale grocery business we have used Kellys for approximately 30 years and have over 1,200 now rolling on truck and trailer equipment in the Southwest. Our records definitely prove that 'Kellys are tough,' and the fact that they can be recapped several times keeps our costs at a minimum."
Paul A. Lewis
Orange Empire Stores Assoc., Riverside, Cal.

# ew ever switch again!


11 years!
"Eleven years ago I started with a set of Kelly CHT's and have been a 100% Kelly user ever since. Kelly Truc Tracs and CHT's have proved themselves over all kinds of roads and under all kinds of loads. Longer original mileage and more recaps make them the lowest cost-per-mile tire we've ever used."
Clyde Powell
London Grocery Co., London, Ky.
66 PHONE
60th Anniversary

**KELLY** *Springfield* **TIRES**

**There's a tough KELLY for every trucking job!**

| TRUC TRAC | SUPER ARMOR TRAC | COMMERCIAL | DUAL TRAC | LUG TRAC |
|---|---|---|---|---|
| *Delivery* | *Highway* | *Heavy Tread* | *Special Service* | *Special Service* |

# Roosa-Master Fuel Injection Pump

Continued from Page 94

gine. The pump has operated successfully in production on a Buda 844 cu in. engine with a constant speed of 1200 rpm.

### Few Moving Parts

The pump has no ball bearings, poppet valves, springs or gears. It requires no special lubrication system since it lubricates itself with the filtered fuel it pumps. There are comparatively few moving parts, and, with the exception of the fuel line connectors and fuel line connector screws, it has the same number of parts regardless of the number of cylinders it serves. No adjustment is required since time relationships and sequence of the various functions are located dimensionally during manufacture.

While the company is not planning to get into the replacement market directly through distributors at present, the Roosa-Master Pump is available for field installations.

The pump is interchangeable in these instances and installation involves no problems. Three types of mountings are generally used, the flange mount, distributor mount and a bracket mount for practically any high speed diesel engine application. However, the pump will operate in any position and, therefore, other types of drives and mountings can be employed. It can be supplied with either a hydraulic governor, the centrifugal flyweight type governor or utilize existing governor.

As shown in the accompanying figures, the distributor rotor is driven through the drive shaft in proper timed relation and rotates in the hydraulic head. A vane type fuel transfer supplies fuel under pressure to the plunger cylinder. The function of the distributor rotor is to provide charging passages into which fuel flows from the metering valve to the plunger cylinder. It also provides an outlet passage through which the fuel flows to the various lines leading to the injection nozzles. The hydraulic head has as many drilled passages as there are cylinders in the engine.

A radially positioned cylinder is incorporated in the flanged end of the rotor. There are two opposed pump plungers which provide the pumping action. They are actuated toward each other simultaneously by two rollers in their shoes guided by two slots over equally spaced, opposite, internal cam lobes in the cam ring. The cam ring, therefore, has as many oppositely spaced lobes as there are cylinders in the engine.

(TURN TO PAGE 130, PLEASE)


THE *Anthes* LINE

This is the extension arm model. Available with non-extension arms, also.

**Get it!** **Anthes "PANORAM" Mirror**

***new • big • triple-size glass***

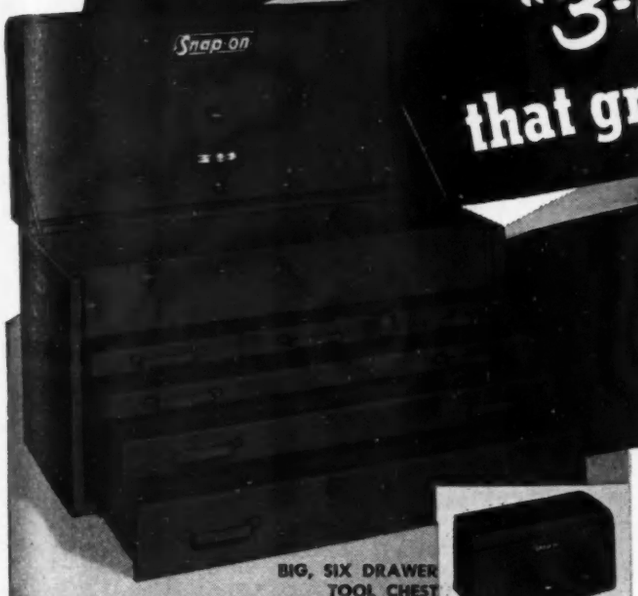
Yes, you can see more . . . and easier—faster—better with this new Anthes Panoram heavy duty mirror. You'll see that this big 85 sq. in., triple size) mirror indeed gives you a "panoramic" view. Head is heavy gauge steel; supports are welded steel tubing — lustrous plated or bright aluminum finish. Designed and made to stand up — over the road, and at a new low price. Write or see your jobber for details and price.

ANTHES FORCE OILER CO., FT. MADISON, IOWA

**Anthes** THE FIRST LINE OF SAFETY

*. . . and proud to serve the safest drivers on the road!*

# choose the... "3-way combination" that grows with your needs!




BIG, SIX DRAWER TOOL CHEST

TWO DRAWER SECTION

EASY MOVING ROLL CAB

## Snap-on* TRIPLE UNIT TOOL CABINET

Any way you look at it, you're out ahead when you choose your tool chest from this Snap-on "handsome threesome"! You can start with one unit, or any combination of units, that fits your present needs. You can add a unit as your tool equipment grows . . . and *know* that it will fit right and *be right!*

Built of electrically welded heavy gauge steel with reinforced tops and tube-type corners to withstand toughest service through the years ahead. Drawers are easy gliding slide run—can't sag, bind or pull out and spill tools. High grade tumbler type locks protect your tool investment.

Let your Snap-on Man show you the superior features and construction of this triple unit cabinet. The big 104-page Snap-on catalog includes a wide range of chests, Mechanikits, Coaster Cabs and Rolla-Benches. Ask your Snap-on Man for your copy, or write,

**SNAP-ON TOOLS CORPORATION**

8026-G 28th Avenue, Kenosha, Wisconsin

*Snap-on is the trademark of Snap-on Tools Corporation.

## Men Who Roll the Big Rigs Choose . . .

# ERIE WHEELS
*for Safety*

Look at the Erie Tubular Spoke—the strongest and lightest engineering section—pioneered by Erie over 25 years ago—still the industry standard . . . Six rim bolts . . . Six clamps . . . Six brake drum bolts . . . No Compromise with SAFETY or STRENGTH.

*Specify* — *Erie Wheels*

**ERIE MALLEABLE IRON COMPANY**
*Automotive Wheel Division*
ERIE • PA.

# 354


## Fuel Injection Pump

Continued from Page 128

Threaded into the opposite end of the rotor is the transfer pump rotor which contains the vanes for the fuel transfer pump. This pump draws fuel from the supply tank through a filter and forces it down the drilled passageway in the hydraulic head, around the annulus or groove in the distributor rotor to the metering valve. A relief slot in the rotor shank connecting the annulus with a reduced diameter permits the fuel to completely fill the cavity of the housing. A return line is provided to allow the fuel to flow back to the tank. Air entrapped in the pump is also carried from the pump by the fuel through the return line.

The quantity of fuel entering the angular passage from the metering valve is controlled by the action of the metering valve. When the registry of that passage and one of the charging ports in the distributor rotor is accomplished, the fuel enters the axial passage in the rotor. It then flows to the pump cylinder forcing the plungers apart in proportion to the quantity to be injected on the following stroke. As the plungers are forced apart, and the charging has been completed, there is a very slight momentary interval when the fuel is trapped. This is due to the fact that the charging port has passed out of registry with the passage from the metering valve and outlet port has not yet come into registry with the discharge port in the head.

Further rotation of the distributor rotor causes the outlet port of the rotor to come into registry with the discharge port in the hydraulic head. At this time the cam rollers rise toward the center of the cam, forcing the pump plungers together. This causes the fuel to be ejected from the pump to the injection line leading to one of the injection nozzles.

**END**

Please Resume Reading Page 96

Janesville Sand & Gravel Co.

**35 TRUCKS**

**5004 HORSEPOWER**

# RUNNING SMOOTHLY, ECONOMICALLY, WITH CITIES SERVICE LUBRICANTS

CITIES SERVICE

For any truck, the heavier the load, the tougher the job. And when that load is cement, and the truck must mix it too, the job becomes doubly tough. It means more working mechanisms, more actual wear points on that truck that must have expert lubrication . . . and the lubricants that have done an outstanding job for Janesville Sand & Gravel Co. are the finest ever produced by the petroleum industry . . . the complete line of Cities Service lubricants.

Says George Meyer, Janesville official: "Our experience enables us to recommend Cities Service oils and greases as well as the technical assistance Cities Service lubrication engineers so generously supply."

You'll hear a similar story wherever Cities Service lubricants are used. For better results with your trucks and plant machinery, call your nearest Cities Service representative or write Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

# Electrically Operated Tailgates

Continued from Page 96

vice only their own stores, each store is also equipped with plug outlets.

### Independent Trailers

There are other features concerning the electric motors that this company feels are advantageous. First, all hydraulic lines running from the tractor engine to the trailer unit have been done away with and with them all oil leaks and the subsequent falling pressures. Floors in the loading dock area are much cleaner than formerly since no more oil leaks on them.

The electric motors make each trailer a self-contained unit not having to depend on tractor engines to operate tail gates. Another advantage leading to smoother loading and unloading is that now tail gates operate at a constant speed.

While each trailer is equipped with some 25 ft of electric cable there have been occasions—such as the opening of a new store where power was not yet available—when power was obtained from a neighboring store, or even in rare cases from adjacent homes. In such cases, additional lengths of cable were required.

A further precaution against city power failure is provided in that Sanders has a portable gasoline-powered AC-DC generator which has been used where no city power was available.

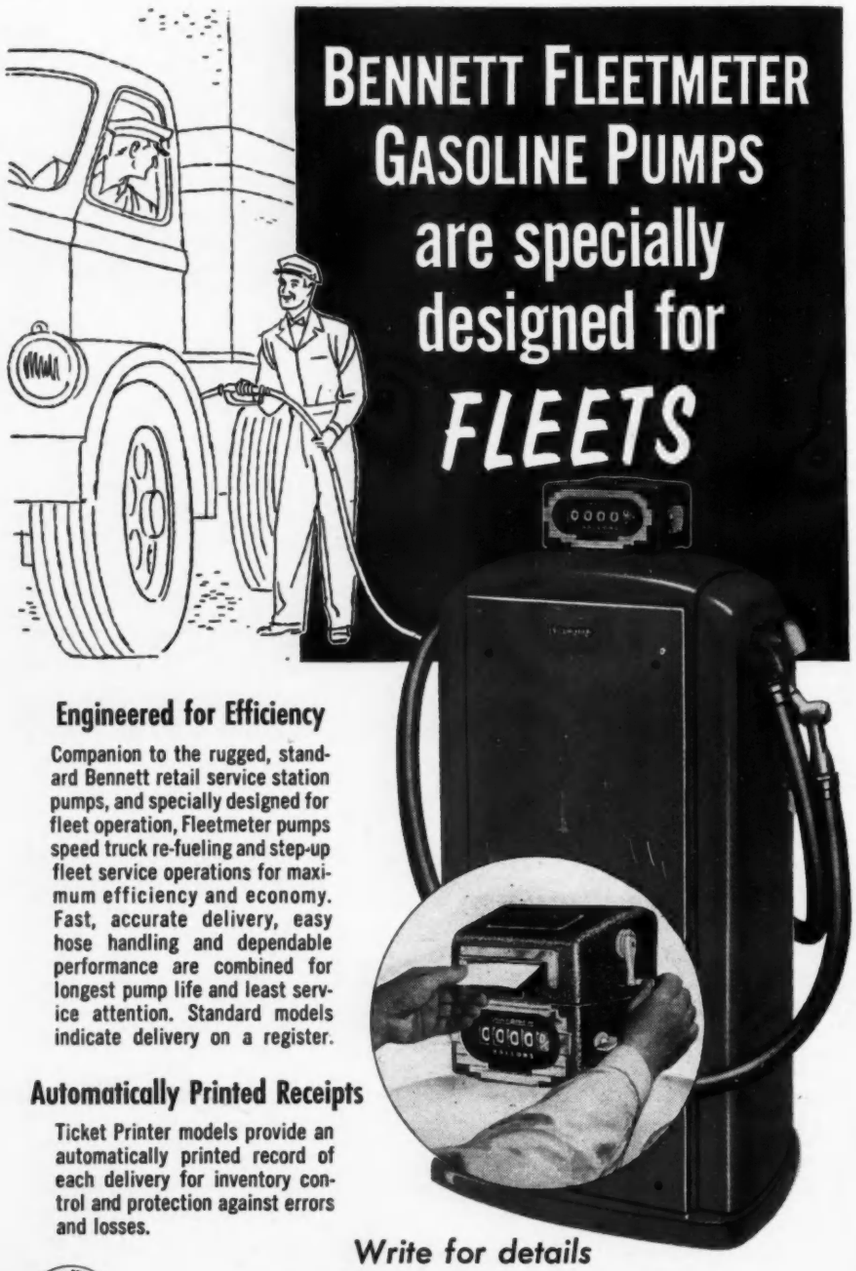
### Overhead Doors

Another fine feature of the Sanders' trailers are the overhead trailer doors which swing up and recess fully into the trailer interior at a touch of the drivers hand. These doors are specially built by a garage door manufacturer.

Built in a single piece the doors require only 18 in. of inside space for clearance. While the first door cost around $400, the cost has been reduced to $90 by reason of volume production.

END

Please Resume Reading Page 104


**Engineered for Efficiency**

Companion to the rugged, standard Bennett retail service station pumps, and specially designed for fleet operation, Fleetmeter pumps speed truck re-fueling and step-up fleet service operations for maximum efficiency and economy. Fast, accurate delivery, easy hose handling and dependable performance are combined for longest pump life and least service attention. Standard models indicate delivery on a register.

**Automatically Printed Receipts**

Ticket Printer models provide an automatically printed record of each delivery for inventory control and protection against errors and losses.

*Write for details*

**JOHN WOOD COMPANY**

**Bennett Pump Division**

Muskegon, Michigan • Toronto, Ontario

*Offices in Principal Cities*


### New "Super Duck"

**GMC Truck and Coach Division, General Motors Corp., Pontiac, Mich., has announced development of a new "Super Duck." It has a 4-ton capacity as compared with the 2½-ton rating of the original Duck. It has a 302 cubic inch GMC engine developing 145 hp, while the first Duck had a maximum of only 104 hp. Hydra-Matic drive is incorporated in the Super Duck. Besides carrying its top load over Lake Michigan sand dunes and up a 60 per cent grade, the Super Duck repeatedly weathered 20 foot waves in the surf on the Pacific Coast.**

# *For Quality You Can Trust — Rely on Proven...*

# YORK-HOOVER

## *all aluminum*

## COMMERCIAL TRUCK BODIES

**Why York-Hoover Truck Bodies Can Reduce YOUR Delivery Costs**

1. Engineering the body for the specific transportation job to be done is the first and most important reason why York-Hoover Truck Bodies save you money.

2. The second reason is that York-Hoover Truck Bodies are specifically designed for ease in replacing major assemblies and parts, a factor that contributes to lower maintenance costs for you.

3. Lightweight construction with rugged durability reduces wear and tear on chassis and speeds up deliveries—the third reason York-Hoover Truck Bodies are the best buy for you.

4. The fourth reason is that for 62 years, York-Hoover Truck Bodies have maintained a high record of quality, performance, and cost-saving efficiency and this experience is at your command.

**Let us help YOU with YOUR transportation problem.**

**York-Hoover Corporation**
YORK, PENNSYLVANIA
**Body Division**

# Engineers Review Reefer PM, New Oils

Continued from Page 77

Fred Hague, of Sun Oil Co., acting as chairman of the round table, concluded that while a satisfactory answer depended upon an intelligent evaluation of costs through a good system of record keeping, there were several ways to "skin the cat." He opened the meeting by stating that costs would determine which practice is used. But he warned that the situation is continually changing and that fleetmen should keep evaluating the possibilities in light of new prices, changing labor picture, improved time savings and reductions in overhead.

Members of the panel were Harry Cooke, of Penn Fruit Co.; A. A. Dash, of Supplee-Wills-Jones Milk Co.; H. H. Earl, of United Parcel Service; F. K. Glynn, of American Telephone and Telegraph Co.; C. H. Ruth, Jr., of *The Washington Evening Star;* and R. D. Sidel, Metropolitan Distributors, Inc. W. R. Hilton, of Mason and Dixon Lines, Inc., provided some written comments which were read into the minutes.

While briefing of each man's presentation would take too long at this time, it can generallly be said that outside shops have a definite place in many fleets and their importance varies with shop size, available manpower, equipment available, shop repair space, type of business served and the extent and ability of management. In many cases outside shops augment the fleet's repair facilities and contribute considerably to improved work flow or repair efficiency. Many times, though not always, the quality of the work compares favorably with that done in the fleet shop.

An important consideration brought out was this: You are always competing with outside shops, and when your records show that you can save by sending work out, then you should go out of the repair business.

### Reefer Maintenance

Four speakers from fleets operating refrigerated equipment took on the subject of operation and maintenance of refrigerated vehicles in a round table set up by T and M Activity. E. W. Lager, of Voltz Brothers discussed high temperature over the road refrigeration problems. Orville Brouer, of Swift and Co., described his company's experience with hold-over plates, and Robert Douglas, of Eastern Motor Express provided some cost figures on mechanical units, developed under a comprehensive testing program at Spector Motor Freight. A. C. Schmidt, of Armour and Co., listed some common complaints lodged against reefer equipment in local operation.

Schmidt criticized the fact that field service facilities are inade-

(TURN TO PAGE 136, PLEASE)


HOOF

GOVERNORS

SAVE YOU

MONEY

No other Governor has Hoof's patented Cantilever Spring that means more accurate speed control, longer life!

No other single item you buy, costs so little and saves so much! Proof? Twenty-eight years of field duty in hundreds of fleets, everywhere!

*Write for New HOOF Catalog*

HOOF PRODUCTS CO., 6543 So. Laramie Ave., Chicago 38, Ill.

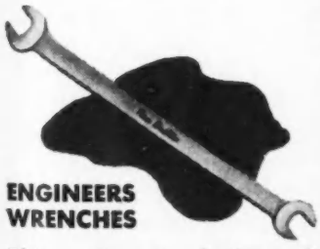
# The TOOLS Mechanics Choose for Today's REPAIRS and Better SERVICE

**SOCKETS**

**The famous New Britain top quality thin wall Sockets . . . fit easily into tight spots on modern motors. ¼", ⅜", ½" and ¾" Drives in all needed openings. Triple plate, chrome finish.**

**REVERSIBLE RATCHETS**

**Sturdiest, smoothest Ratchets made. Exclusive double pawl mechanism gives extra strength without bulk. Streamlined head gets into confined spots easily. ¼", ⅜", ½" and ¾" Drives.**



**ENGINEERS WRENCHES**

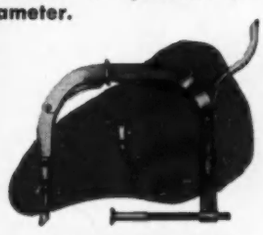
**Thin, strong, balanced Wrenches, forged of finest alloy steel. Open End, Box, Tappet and Combination styles in all sizes.**

The New Britain Line has set a world standard in Tool Quality for many years. Naturally, these great Tools have the precise fit, perfect balance and great turning power modern repair work demands . . . slim, trim, but powerful Socket Wrenches and streamlined Drive Parts — all of the finest alloy steel, heat treated to the peak of rugged perfection and glistening, triple plate, chrome finish. New Britain offers in this complete Line not alone the basic Tools shown, but hundreds of specialized Tools that get mechanics into and out of tight corners and difficult spots on modern engines and equipment. Ask for complete Catalog No. 58.

Shown above is a magnificent New Britain Set #6151T with every basic Tool any professional mechanic will ever need. All 151 Tools contained in a sturdy steel Kit with hinged top and removable trays. Ask about it and the many other New Britain Sets that can be tailored to your particular needs.

**REAMERS, PILOTS AND HONES**

**New Britain Tools afford a complete selection of individual Tools and Sets for reaming or honing bushing of $^{15}/_{32}$" diameter to cylinders 8" in diameter.**



**VALVE LIFTERS**

**Available in sizes and types to service all makes and models of passenger cars, trucks, buses and tractors.**

**STUD EXTRACTORS**

**Modern design Tools for retracting or setting studs. Slip-proof design with milled jaws. Made in ⅜" and ½" Square Drive — capacities ¼" to ¾".**

# New Britain HAND TOOLS

**THE NEW BRITAIN MACHINE CO.**
**NEW BRITAIN, CONN.**

## Engineers Review New Oils

Continued from Page 134

quate in many localities, and stated that many service men do not completely understand the mechanics of these units. He called for a program that would have as its objective the standardization of some of the components and parts within the industries so that field service and parts stocks could be simplified.

It was generally agreed within the group that many of the present day headaches with regard to using either mechanical units, hold over plates, dry ice with air circulation could be laid at the feet of the operator himself. They suggested that the buyer should (1) become thoroughly familiar with all types of refrigerating equipment before purchasing, (2) set up an adequate PM program to insure that the equipment will perform satisfactorily, (3) use the equipment in the way it was designed to be used. In this connection many incorrect practices in loading, insulation, body building, etc., were pointed out by the panel.

R. F. Allyne, of Hunter Mfg. Co., during the discussion period, pointed out that a great deal of improvement is needed in the field of refrigeration if trucks are to continue to compete with rail transportation. He warned that whereas three years ago trucks were carrying 70 per cent of the frozen food cargo out of Florida now railroads with new refrigerated cars haul 75 per cent.

### Multi-Grade and Viscosity Oils

New multiple-grade and viscosity oils function satisfactorily under virtually all conditions and reduce the consumption both of fuels and lubricants, it was reported in a symposium.

J. A. Miller and L. M. Hartmann, of California Research Corp., Richmond, Calif., stated that the new lubricants satisfy even the differing and incompatible requirements of engine and driver. They explained that drivers want easy starting, rapid warm-up, reasonable gasoline mileage, high power output, long engine life, freedom from engine noise, and high oil mileage, and that, until development of the new lubricants, these demands could be met, and then not simultaneously, only by using different oils. They said the new lubricants give the high gasoline mileage of the lower viscosities and protection from engine wear previously a benefit of higher viscosity oils, and additionally, tend to reduce detonation and preignition.

It was explained that, because of the development, a single crankcase oil now provides the performance characteristics both of SAE 10W, or light oil, and of SAE 30, or medium-heavy oil. It was reported that extensive tests have shown oil mileage improvements on the order of 20 per cent and fuel mileage gains of 14 per cent, both in passenger cars.

(TURN TO PAGE 138, PLEASE)

BIG
FOR FULL VISION
STURDY
FOR LONG SERVICE
TRUK Grote LINE
H. D. TRUCK MIRROR
Large 6"x16" mirror is firmly mounted in a rust-proofed frame with a rubber channel. Strong tube steel brackets will mount on any truck or tractor — secure against rattle. One model fits either side of all trucks. The latest addition to the complete line of Grote Mirrors in all sizes and shapes for every application.
No. 200
ARMORED CLEARANCE LAMP
Red, amber, green or clear Grotelite Plastic Lens.
No. 404
DIRECTIONAL TURN SIGNAL
Thin - Light- Sturdy. Single lamps or complete sets.
GROTE -- The complete line of automotive lighting equipment -- at your dealer or jobber.
No. 250
The STOP LAMP with authority.
No. 0-110
GROTELITE PLASTIC REFLECTOR
Highest visibility — either metal mounted or all Plastic.
No. 70-A
FLAMELESS FLARES
Meet all I.C.C. emergency warning signal regulations.
THE Grote MFG. CO., INC.
GROTE SQUARE
BELLEVUE, KY.
(Opposite Cincinnati)

# To get 50% to 80% more service out of fan belts look for this

The "T" is your assurance of a belt Specially Engineered for Trucks and Buses

From coast to coast men who maintain trucks and buses have stated *in writing* that Gates "T" Belts wear 50% to 80% longer than any others they have used.

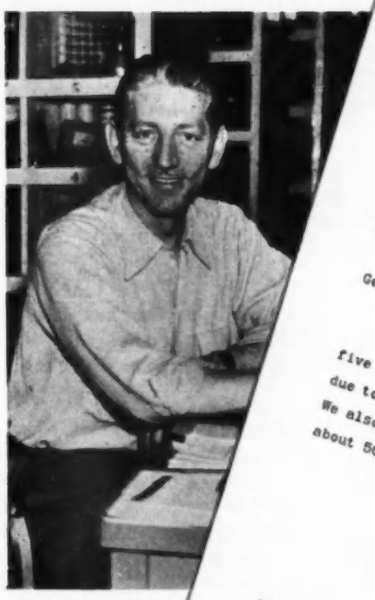
For example, Walter Cholewinski, purchasing agent for the Allegheny Construction Equipment Co. of Pittsburgh, says in his letter shown here, that they get 50% greater service life from Gates Belts and that road service to trucks with belt failures has been greatly reduced.

This means that trucks stay on schedule...*net operating time is kept UP*...revenues, profits are increased.

Naturally, the far longer life of Gates Belts saves money on replacement costs, too—users report that their belt replacement costs are cut in half and often far more than half.

Install Gates Belts on your equipment and match their record against any other belt you have used—prove to yourself the cost-cutting, money-making performance of this specially engineered belt. Your nearby Gates jobber will supply you promptly with the Gates belts you need. The Gates Rubber Co., Denver, Colorado—*World's Largest Maker of V-Belts.*

A-53



ALLEGHENY CONSTRUCTION EQUIPMENT COMPANY

March 11, 1952

The Gates Rubber Co.
999 So. Broadway
Denver, Colorado

Gentlemen:

Having used Gates belts for the last five years, we have found that our road service due to belt failure has been greatly reduced. We also find that our belt service life is about 50% greater with the Gates Belts.

Very truly yours,

ALLEGHENY CONSTRUCTION EQUIPMENT CO.

W. Cholewinski

Walter Cholewinski
Purchasing Agent

wc/3

• • • tough, multiple-ply cover developed by world's largest maker of V-Belts.
• • • built with rayon cords—the same kind used to increase the life of Truck tires.

Gates®

The mark of Specialized research

# GATES TRUCK & BUS V-BELTS

Model 12 Urban Panel Delivery body using Armorply. Made by Montpelier Manufacturing Co., Montpelier, Ohio.


# Truck Body Maker Cuts Costs With Armorply

**Armorply*, unique metal clad plywood, proves more sturdy, easier to fabricate.**

The Montpelier Manufacturing Company of Ohio specializes in the manufacture of bodies for urban type delivery trucks. They believe that because of constant usage doors are the keystone of motor truck body building. Here's what Mr. H. A. Schwartz, president of Montpelier, has to say about Armorply: "We make many types of truck doors. They are all hand-fashioned and carefully fitted to the frames. Our doors are more serviceable as well as decorative. Because of the extra effort we put into these doors we must use materials that economically serve the purpose. We find that stock size Armorply meets these needs. Because of the ease with which it can be fabricated Armorply is a prime factor in lower over-all costs."

**WHAT IS ARMORPLY?** It's Weldwood plywood or other core material in a variety of thicknesses to which metal has been permanently bonded on either or both sides. It has the advantage of being light in weight and easy to fabricate. This combined with the wear resistant qualities of metal makes Armorply especially suitable for many applications.

**USES OF ARMORPLY.** You can save by using Armorply in many ways: for refrigerated and non-refrigerated truck bodies and floors (Armorply is vermin-proof and easy to clean)—cuts down damage when used as body liners for existing equipment, for pallets, tote boxes, loading platforms and ramps, package delivery slides and a host of other applications.

**WHAT'S YOUR PROBLEM?** Want to cut costs and speed production? Then contact the Armorply Division of the United States Plywood Corporation, or mail coupon. *Trade Mark

Armorply*

*METAL FACED WELDWOOD PLYWOOD*

*A Product of*

**UNITED STATES PLYWOOD CORPORATION**

United States Plywood Corporation
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New York 36, N. Y. CCJ-7-54

FREE: Please send me free sample of Armorply and descriptive literature. ☐
Please have a salesman call with full details. ☐

Name.....

Address.....

City.....State.....


## Engineers Review New Oils

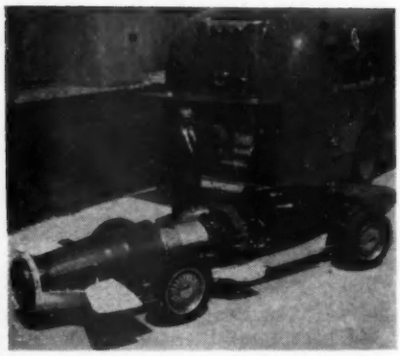
Continued from Page 136

Carl W. Georgi, of Quaker State Oil Refining Corp., however, warned that while the new lubricants have many advantages, and that it has become possible to make an oil covering grades SAE 5W to SAE 50, the technical problem of "skipped grades" must be considered.

A multi-viscosity oil which skips a grade or two is sometimes regarded with doubt and question by many service station operators and oil consumers. He pointed out that there is some question as to whether the new oils actually do skip grades, and explained that while a new SAE 10W-30 type oil meets SAE 10W, 20W, and 30 viscosity ranges, it cannot exactly fit SAE 20 requirements.

### GMC's Turbine Powered Bus

On the assumption that if the turbine eventually enters the ground transportation field, it is likely to appear first in heavy-duty commercial vehicles, General Motors has installed a single burner prototype of the 370 hp twin burner turbine in a GMC transit bus.



Immediate problems appear to be that of high fuel consumption, lack of engine braking and delayed acceleration. While smooth operation and very desirable torque and power characteristics were achieved, Mr. Turunen indicated that a great deal of work must be done on the turbine before pinwheels replace pistons.

END

Please Resume Reading Page 78

# "The CP Air Impact Wrench is the most important tool in our mechanics' tool boxes"

. . . says Stephen Lawrence, Director of Service, Foley Chevrolet Motor Sales Co., Newark, N. J.

"Foley Chevrolet originally bought 15 CP Air Impact Wrenches and it wasn't long before they had more than paid for themselves," says Steve Lawrence, Director of Service. "Our mechanics must have liked them too, because they soon repurchased them for their own tool kits. One of their big advantages is the Controllable Power feature which lets us turn nuts to predetermined uniform tightness. We find Controllable Power most useful in replacing cylinder heads, for the many types of cap screws found on Power Glide overhaul – and wherever the factory has recommended torques."

CP Controllable Power Air Impact Wrenches are available with attachable angle heads and in ½", ¾" and 1" square drive capacities.

Mr. Lawrence expresses the feelings of service managers everywhere who are now realizing the savings effected by CP Air Impact Wrenches. To learn how you, too, can cut your nut turning time as much as 75% and get more billable output per man, write for information. *Chicago Pneumatic Tool Co., 8 East 44th St., N. Y. 17, N. Y.*

**Chicago Pneumatic**

AIR AND ELECTRIC IMPACT WRENCHES • PNEU-DRAULIC TRUCK JACKS AND PUMPS • ZIP-GUNS • BEAD BREAKERS

# Accident Claims . . . Worth the Expense?

Continued from Page 79

Insurance companies do not measure the expenses of an accident claim against that one particular claim. Their expenses are justified not by what they save in one specific case, but by what damages and expenses they may avoid in the number of future cases that may be influenced by the result of the one case under consideration.

While their direct expenses—much the same as an individual's in any one case—are charged against the particular claim, insurance companies spread their overhead costs in handling claims among all their insureds. Thus a small part of someone else's accident claim expense falls on many more than just the parties involved.

### Impact of Expense

In summary, the impact of expense is:

1. To cause most claims to be settled for less than a court would order paid.

2. To cause the injured party to get less than the settlement amount since he must deduct his expenses.

3. To cost the defendant the settlement amount plus his expenses, a total of probably more than the "just value" of the claim against him.

### Settle Out of Court?

In view of this impact of expense on accident claims, might it not be better to settle out of court and before the expenses have added up? Problem here is to estimate a reasonable settlement figure, and there are many ways to do it.

An interesting system used by one lawyer as a guide is this formula:

*The chances of winning the case in court multiplied by the chances of actually collecting the money multiplied by the fair total of the claim.*

If for example:

1. A claim has a fair value of $5,000.

2. The lawyer reasons he has a three-to-one chance of winning the case in court (75 per cent or ¾).

3. The case is against an insurance company with enough re-

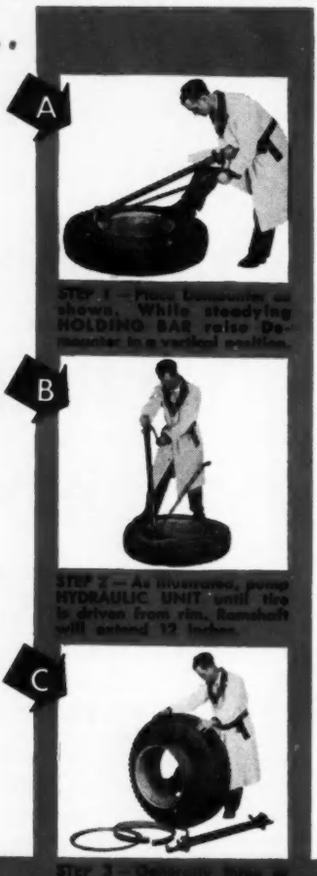
(TURN TO PAGE 142, PLEASE)


THERE'S AN EASIER WAY...

Now - at last a quick and easy way to remove stuck or frozen tires

No beating or pounding for hours. No aching backs and no lost profit. The BOS Demounter will remove the most stubborn truck tire from the toughest rim.

NEW SUPER MODEL




- Handles all sizes truck tires 15" to 24"
- Portable—Used in the Shop or for Road Service
- Features Hein-Werner Hydraulic Unit, 6,000 lbs. Pressure
- Prevents Damage to Rim and Tire
- Safe—Protects Operator from Injury
- Precision Built of the best Steel

Time Saver for Trucks: Money Maker for Dealers

MAIL ORDERS OR REQUEST FOR FURTHER DETAILS TO

JACK P. HENNESSY SALES CO.

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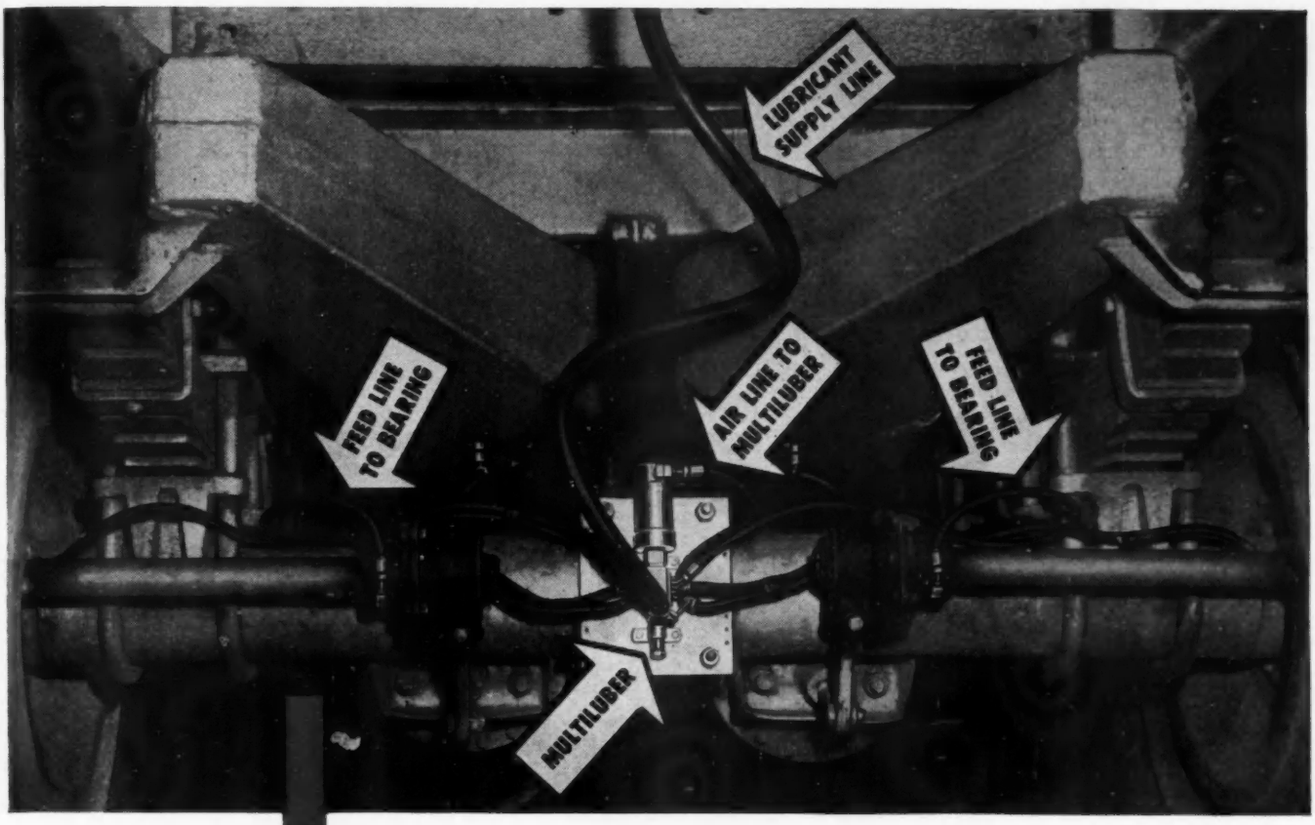


# Now! AUTOMATIC SELF-LUBRICATION FOR TRAILERS with New *Lincoln* MULTI-LUBER

**DOWN GO YOUR COSTS... UP GO YOUR PROFITS** per ton-mile!
Amazing, fully automatic system provides periodic, simultaneous lubrication for every bearing while trailer is interlined. No more down-time for chassis lubrication. Bearings and moving parts last 1,500% longer.

Here's what Fleet Operators say about *Lincoln* Multi-Luber:

*"All bearings were well lubricated with no signs of wear."* —Consolidated Forwarding Company, Inc.

*"40,000 miles . . . and the Multi-Luber System functioned perfectly!"*—Husmann & Roper Freight Lines, Inc.

*"Due to excellent results of our tests, we are equipping 20 more trailers with Multi-Luber."*—Plaza Express Company, Inc.

- For air-brake-equipped trailers—Multi-Luber is actuated with each brake application . . . delivers measured lube charge to every connected bearing.
- Fully sealed! Bearings get refinery-clean lubricant on each charge.
- 7,500-mile capacity lubricant reservoir . . . no maintenance.
- 12 bearings served by a single Multi-Luber System.
- Easily installed by your own mechanics. No special tools, parts or engineering knowledge required.

FREE BOOKLETS describe Multi-Luber in detail. Write for Bulletins 519 and 519S.

*Lincoln*

THE MOST TRUSTWORTHY NAME IN LUBRICATING EQUIPMENT

**LINCOLN ENGINEERING COMPANY**
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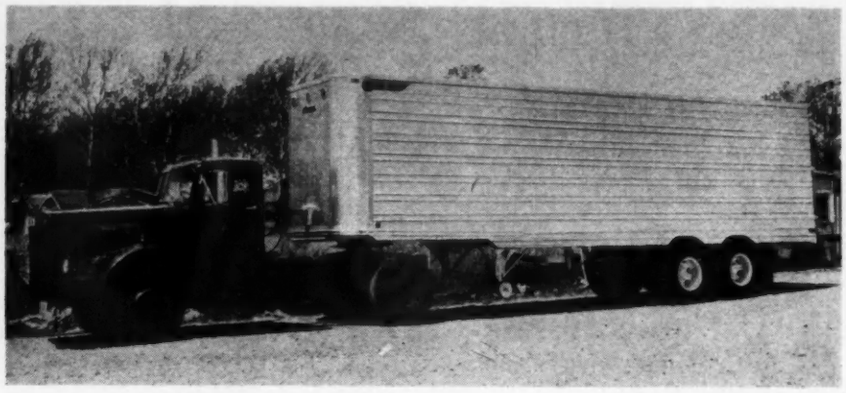


**Hi-Volume Semi-Trailer**

**This new semi-trailer announced by American Body & Trailer Co., Oklahoma City, Okla., is said to have up to 30 per cent more capacity obtained by increasing width and height. It still keeps within legal limits. Post thickness has been reduced to give an inside clearance of 92½ in. This "Aluminum King, Hi-Volume" van comes with either straight or drop floor.**


IN CHICAGO IT'S

ILLINOIS AUTO ELECTRIC CO.

AUTHORIZED FACTORY WAREHOUSE SERVICE

*for Special Truck and Trailer Equipment*

- Elston Sanders
- Bendix-Westinghouse and Bendix B-K Vacuum Brakes
- A. S. F. Fifth Wheels
- Elston L. P. G. Cargo Heaters
- Hunter Cab and Cargo Heaters
- Kim Hotstart Engine Pre-heaters
- Mondak Voltage Selector Switch
- Cargo-Guard L. P. Gas Heaters
- Kysor Automatic Radiator Shutters
- Sun Tachometers & Sangamo Tachographs
- Ensign Carburetion Equipment for L.P.G. Systems
- Prior and Michigan Fleet Safety Tanks
- Detroit Automotive Load-Booster 3rd Axle Assemblies and Thornton 4-Wheel Drive Axles
- American Bosch & Bendix-Scintilla Diesel Injection Service

POLICE & PUBLIC SERVICE SPECIAL EQUIPMENT

Leece Neville Alternators — American Bosch Generators
Lorraine Spotlights — Federal Beacon-Ray Lamps

I.C.C. REQUIRED SAFETY & LIGHTING ACCESSORIES

Complete stock on hand of nationally-advertised

Fuses — Flares — Flags — Turn Signals — Marker Lights — Fire Extinguishers

COMPLETE TRUCK REFRIGERATION EQUIPMENT

- Hunter Dry Ice Coolers
- Kold-Hold Truck Plates
- Allen Coolers
- Arctic Traveler
- Kold-Trux Truck Refrigeration Units
- LeHigh "Blu-Cold" Truck Refrigeration Units

Call us regarding your special equipment needs.

ILLINOIS AUTO ELECTRIC CO.

2011-37 S. Indiana Ave. • Chicago 16, Ill.

Phone CAlumet 5-4444


## Accident Claims . . .

Continued from Page 140

serves to pay the court award (100 per cent or 1).

The mathematics would work out like this:

¾ (the chances of winning the case) × 1 (the chances of being able to collect the court award) × $5,000 (the fair total of the claim) equals $3,750. So the lawyer might attempt settlement out of court for $3,750 and save the expenses not already incurred.

It must be understood, however, that the formula represents only an estimate that could easily be modified by other factors surrounding the claim that also are not capable of exact measurement. Among these are:

1. A wide divergence of honest opinion as to the value of the claim.

2. There is no exact rule for measuring damages.

3. The jury's expected decision cannot always be reasonably foretold.

4. Emotional factors cloud the issue.

Fleet operators should also note that expense has the last word here too. The estimate for settling out of court is $1,250 less than the "fair total of the claim!" There is an old adage that says nobody makes a profit from insurance except the insurance company. Insurance is designed to compensate only for the loss incurred. When expense is included in the picture, not only is there no profit but there is a loss for all concerned.

**END**

**Please Resume Reading Page 80**

# *Take your pick...*

## THEY'RE ALL JALTEN!

J&L's New JALTEN series enables you to select low-alloy, high-strength steel in the following combinations of advantages:

**JALTEN No. 1** — High strength, good formability and fabricating —good resistance to low temperature impact.

**JALTEN No. 2** — High strength, moderate forming—improved resistance to atmospheric corrosion.

**JALTEN No. 3** — High strength—improved resistance to abrasion.

**Remember to specify JALTEN High Tensile Steel for**

- **HIGH STRENGTH • RESISTANCE TO CORROSION**
- **GOOD FORMABILITY • RESISTANCE TO ABRASION**

J&L STEEL

***Jones & Laughlin***
STEEL CORPORATION — *Pittsburgh*

**The data you want is in this book:**

- Chemical Properties of Jalten
- Mechanical Properties of Jalten
- Jalten Equivalents
- Jalten Application Data

Jones & Laughlin Steel Corporation
Dept. 432, 3 Gateway Center, Pittsburgh 30, Pa.

Please forward a copy of your booklet, Jalten low-alloy, high-strength steel.

Name_____

Company_____

Address_____

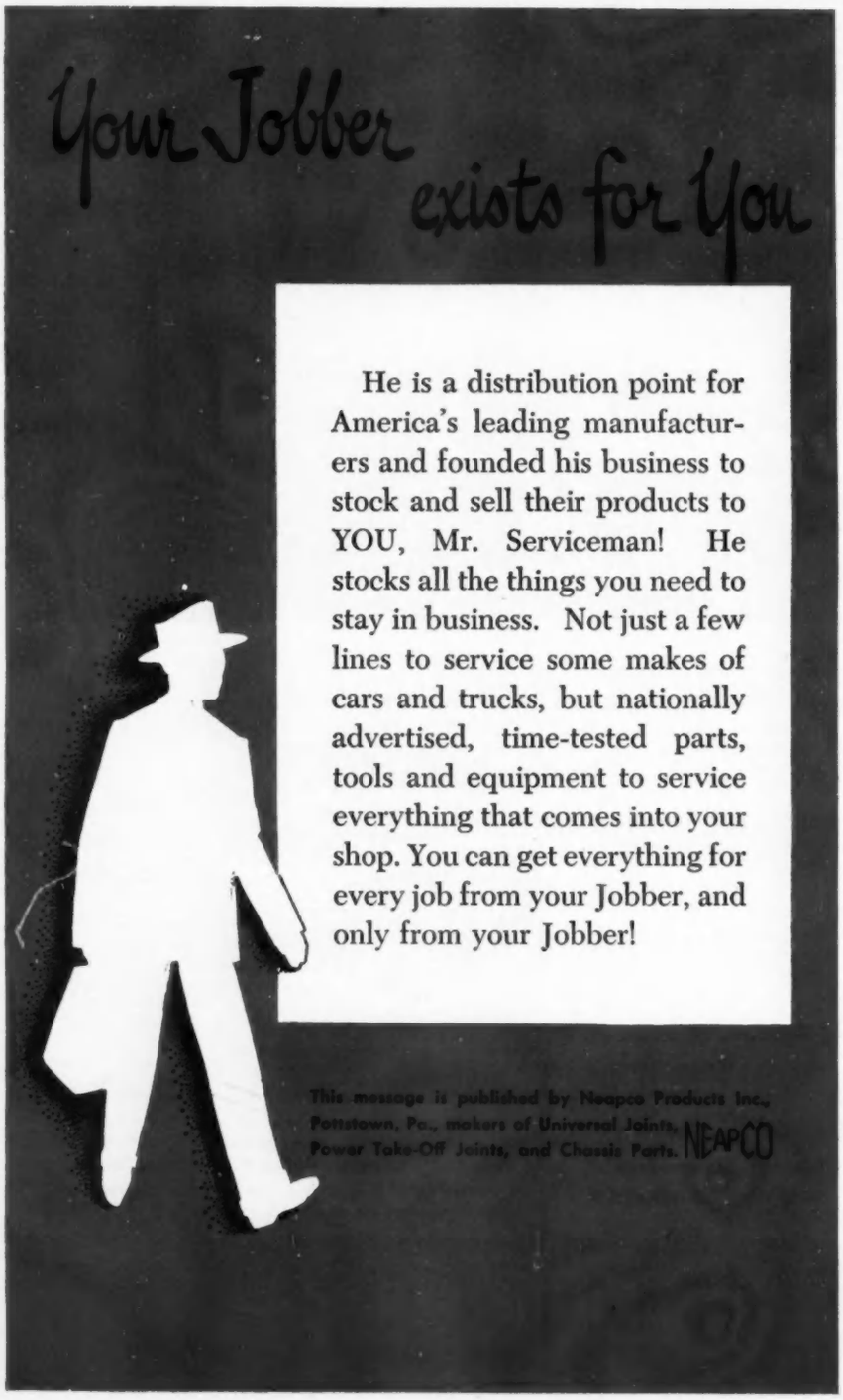
# German Diesel Bids for U. S. Market

Continued from Page 89

### Specifications

| Number of Cylinders | 4 in-line | 6 in-line | V8 | V12 |
|---|---|---|---|---|
| Maximum torque, ft-lb/rpm | 217/1400 | 325/1400 | 434/1400 | 651/1400 |
| Continuous rating (truck duty), bhp/rpm | 82/2300 | 120/2250 | 160/2250 | 230/2200 |
| Intermittent rating, bhp/rpm | 90/2300 | 130/2250 | 175/2250 | 250/2200 |
| Bore, in. | 4¾ | 4¾ | 4¾ | 4¾ |
| Stroke, in. | 5½ | 5½ | 5½ | 5½ |
| Compression ratio | 17.8:1 | 17.8:1 | 17.8:1 | 17.8:1 |
| Fuel consumption @ max. torque (lb/bhp) | 0.40/1400 | 0.40/1400 | 0.40/1400 | 0.40/1400 |
| Number of main bearings | 5 | 7* | 5 | 7 |
| Injector | Bosch | Bosch | Bosch | Bosch |

* 4 for V-6 model.


Your Jobber exists for You
He is a distribution point for America's leading manufacturers and founded his business to stock and sell their products to YOU, Mr. Serviceman! He stocks all the things you need to stay in business. Not just a few lines to service some makes of cars and trucks, but nationally advertised, time-tested parts, tools and equipment to service everything that comes into your shop. You can get everything for every job from your Jobber, and only from your Jobber!
This message is published by Neapco Products Inc., Pottstown, Pa., makers of Universal Joints, Power Take-Off Joints, and Chassis Parts.
NEAPCO

through elimination of water cooling apparatus, ease of maintenance, ease of starting, low fuel and oil consumption, and long cylinder wear.

### Air Cooling

The air-cooling design eliminates the need for a water circuit including the radiator, water jackets around cylinders and cylinder heads, water pump and pipes and fittings. To cool the engine, an axial flow vane type blower, tapered air duct and guide plates attached to individual cylinders and an oil cooling unit are used.

Cylinders and cylinder heads are integral units rather than being part of the block. Each cylinder and head unit may be rapidly replaced and the engine returned to service with a minimum of down-time.

A constant size cylinder and cylinder head unit is used in all engines. It has a 4¾-in. bore and 5½-in. stroke with a compression ratio of 17.8 to 1. Each cylinder head has a pear-shaped turbulence chamber which is designed to produce a thorough air-fuel mixture for high thermal efficiency.

The chamber comprises about 60 per cent of the compression space of the cylinder and is located at the side of the head at a 30-deg. angle to accommodate the large valves needed for high volumetric efficiency. A flat-domed aluminum-silicon piston equipped with three compression rings and two oil rings is used.

### Finned Cylinders

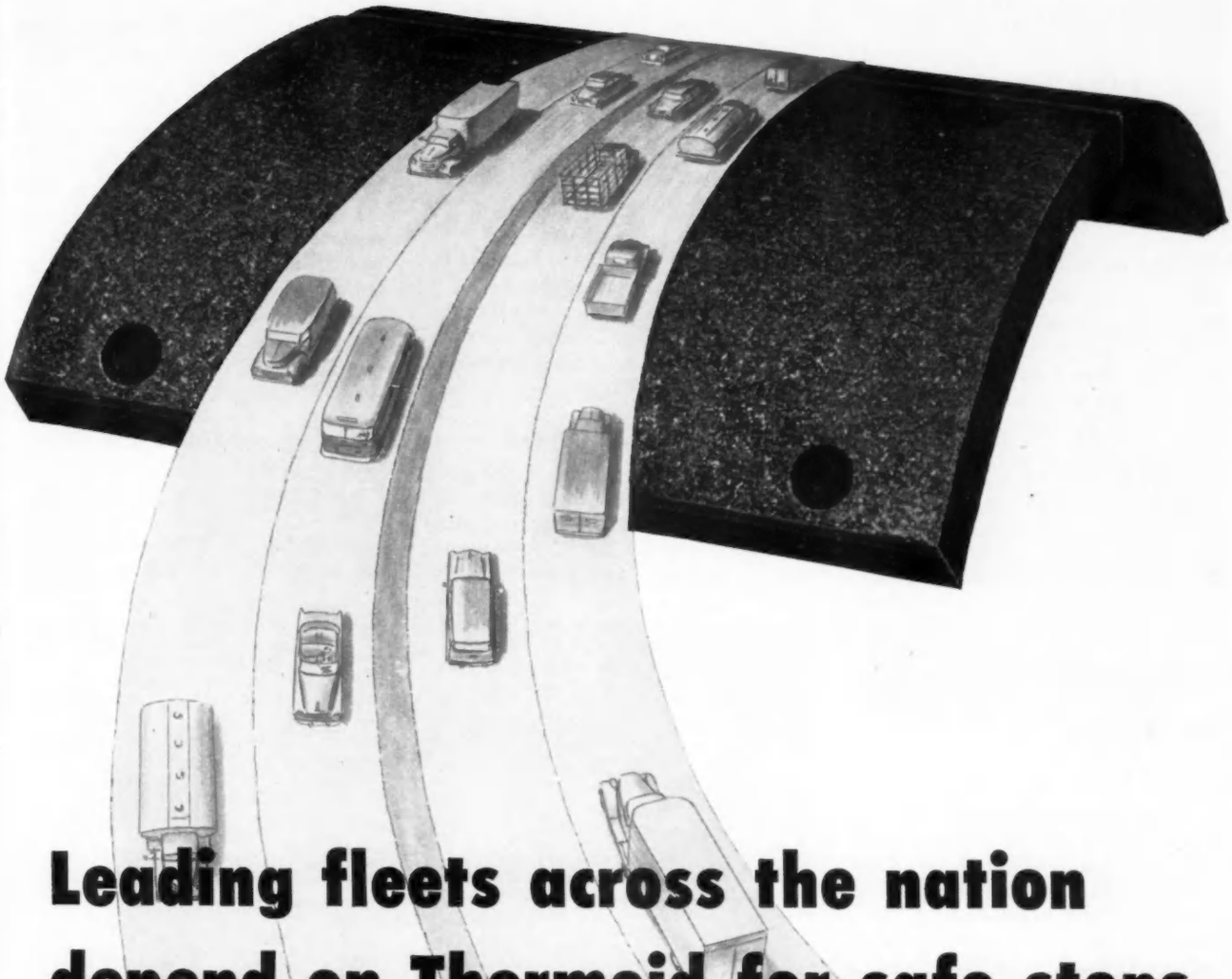
The engine is cooled by air which passes from the blower through a tapered duct and then through machined circular fins on each cylinder which extend over the full length of the piston stroke.

Deutz engines are currently being used extensively in Europe and Africa and other parts of the world in various vehicles and under extreme operating conditions. The units are said to operate successfully within a temperature range from —40 to +140 deg. F.

Condensed specifications for the 4 and 6 and the V8 and V12 models are shown in the chart, above left.

**END**

**Please Resume Reading Page 90**



# Leading fleets across the nation depend on Thermoid for safe stops

Thermoid Brake Blocks are used by fleets from coast to coast. They're the original equipment choice of leading bus and truck manufacturers. Compounded under Thermoid's exclusive Dry Mix Process, originally developed for heavy duty amphibious military vehicles, Thermoid Brake Blocks meet the most rigid stopping tests, regardless of weather conditions or operating temperatures.

Despite increased speed, power and congested traffic, you can rely on the long lasting dependability and economy of Thermoid Brake Blocks—designed for maximum safety at minimum cost per mile.

Thermoid

**Thermoid Company • Trenton, New Jersey**

the standard of precision processing in brake lining, brake blocks, hydraulic fluid, cylinder assemblies, hydraulic brake parts.

# JULY NEWS ROUNDUP

## N. Y. Thruway Mileage Tax

New York State Tax Commission has issued new regulations affecting records to be kept by motor carriers using the New York Thruway. In brief, (1) Thruway mileage traveled for which toll is paid is exempt from the ton-mile tax, (2) receipts must be kept for both paid and charged Thruway mileage, (3) on the reverse of the receipts must be shown the state's ton-mile tax permit number for all vehicles in the combination as well as the carrier's trip or manifest number, and (4) exempt Thruway mileage need not be reported on the mileage tax return.

## PMTA Meeting

James E. Crass, III, president of Seaboard Tank Lines of Scranton, Pa., was elected president of the Pennsylvania Motor Truck Assn., at its annual meeting in Pittsburgh last month. ATA President Jack Cole presented to the association ATA's National Safety Award for the state trucking association whose safety program has shown the greatest achievement at the meeting.

## Dow Memorial Award Winner

Edward J. Emond, director of automotive safety for Armour & Co., Chicago, has been named winner of the 1953 Marcus A. Dow Memorial Award. The award, top honor for a fleet safety engineer, was established by the National Safety Council under sponsorship of the Greyhound Corp. It consists of a plaque and $500 cash.

## New Brake Materials Lab

Johns-Manville Corp. has expanded its research center at Manville, N. J., with the opening of a new laboratory there middle of last month. Main purpose of the new facility will be research and development of asbestos brake linings and other materials. Outstanding piece of equipment is a 200-ton, inertia-type dynamometer for testing stopping qualities of aircraft, railroad, truck, bus and industrial equipment brake materials.

## Mississippi License Plates

A Tennessee motor truck operator has obtained a temporary injunction against enforcement of the new Mississippi law (S. 1721) that requires truck operators with terminals in Mississippi to buy Mississippi license plates for all their trucks.

## New State Laws

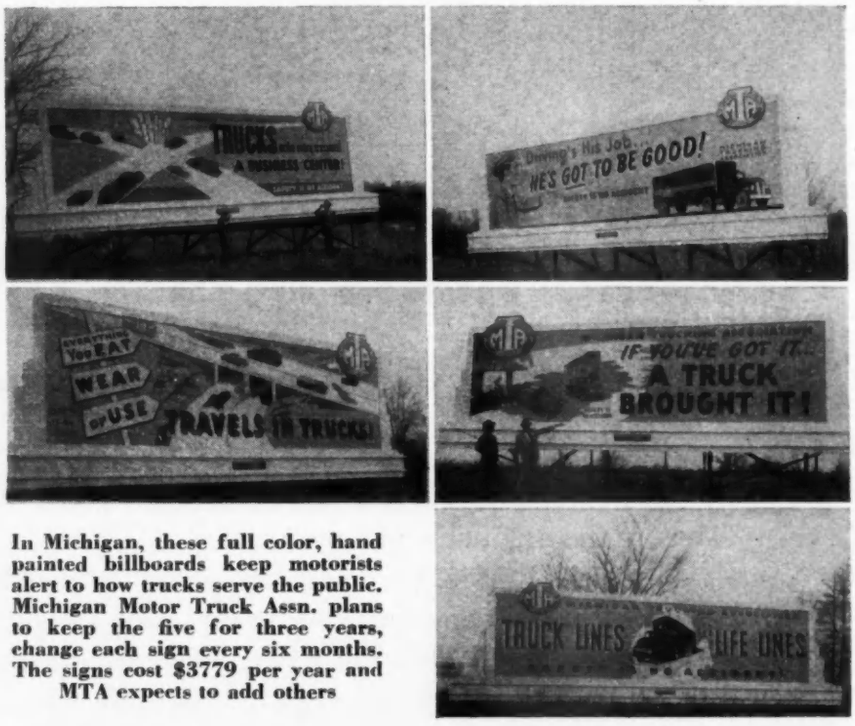
Recently enacted laws affecting truck and bus fleet operation passed by various state legislatures include:

**Louisiana:** H 85—exempting buses operated under franchise within municipalities of 100,000 population from vehicle size limits.

**Massachusetts:** H 2738—requiring rear wheel mudguards effective Jan. 1, 1955. H 59—increasing filing fee for interstate property carriers, changing plate designation and requiring procurement of plates. H 61—requiring property carriers using leased vehicles to keep certain records.

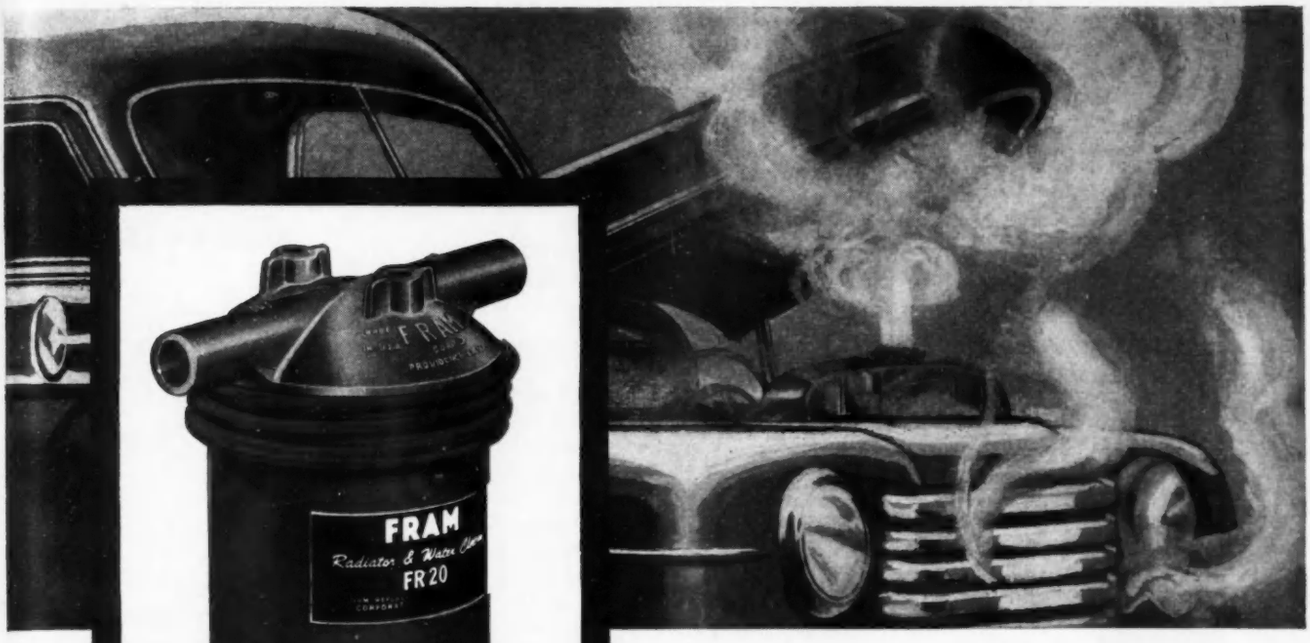
**Mississippi:** S 1306—providing for

(TURN TO PAGE 148, PLEASE)




**In Michigan, these full color, hand painted billboards keep motorists alert to how trucks serve the public. Michigan Motor Truck Assn. plans to keep the five for three years, change each sign every six months. The signs cost $3779 per year and MTA expects to add others**

**High atop Yale Transport's new million dollar New York City terminal is this 75 ft long truck model. About twice regular size, it is illuminated by ten 1000-watt floodlights and has "revolving" lights in its wheels to give it the appearance of movement**




# FRAM Radiator & Water Filter

# STOPS ENGINE OVERHEATING

Now you can prevent clogged cooling systems and dangerous overheating! FRAM Radiator and Water Filters *soften* water to prevent scale... chemically *inhibit* rust and corrosion... *remove* solid particles. It's the *best* way to keep cooling systems operating at peak efficiency.

And remember, FRAM Oil Filter Cartridges keep oil and engines clean—your best bet for longer service at less cost per mile!

All FRAM products—oil, air, fuel, water filters—are sold on a money-back guarantee. See your FRAM wholesaler today for the best life insurance your fleet ever had.

FRAM CORPORATION, Providence 16, R. I. Fram Canada Ltd., Stratford, Ont.

FRAM®
OIL • AIR • FUEL • WATER
FILTERS

NEW!

Ultra-Thin and Lightweight

CATS EYE

High Intensity Lens Pancake Proportion!

No. 30 BRACKET TYPE — Right answer to trucker's greatest need. High intensity. Fully illuminated lens. Only 2¼" deep, 6⅝" in diameter. Mounts flush or on body with furnished bracket. Rigid, compact, durable. Highest quality . . . low cost and maintenance. See jobber's display—NOW!

No. 30
6-8V 21 cp.
S.C. Bulb

It's Even Thinner

CATS EYE

Massive Stoplight! New Flush Mounting Design

No. 30F FLUSH TYPE—Sure to be seen. Most compact flush mounted light available. Flangeless construction permits mounting in mere 4⅝" hole . . . only ⅞" deep from mounting surface . . . eliminates flush mounting headaches . . . 6⅝" in diameter. Mounting gasket included.

No. 30F
6-8V 21 cp.
S.C. Bulb

COLUMBUS METAL PRODUCTS, INC.
COLUMBUS 8, OHIO


## July Roundup

Continued from Page 146

increased gross weight that may be carried on 22 named highways or parts of highways. New weights range from 32,000 lb for 4-ft axle spacing up to 55,980 lb for axle spacing of 34 ft or greater.

### PIE Gets ICC OK

Pacific Intermountain Express has obtained ICC approval of its proposal to purchase West Coast Fast Freight, System Truck Service, System Parts and Equipment Co., Produce Distributing Co., Eckert Forwarding and Distributing Co., and System Tank Lines for about $4½ million.

### Safety Awards

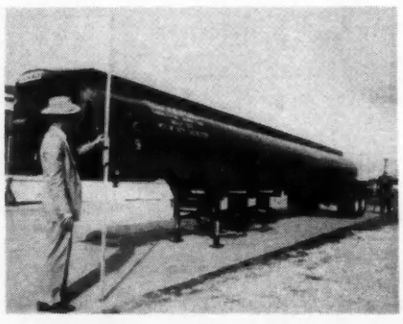
Fleets awarding their outstanding, safe drivers this past month include:

Interstate Motor Lines, Inc., Salt Lake City, Utah—to 42 Salt Lake City—Ogden division city and intercity drivers. Nine drivers have 10-year or better records.

C & J Transport, Inc., Milwaukee, Wis.—to 19 drivers. Two of the drivers have 6-year records, received $250 each in cash. Six of the drivers split evenly a $300 pool for 90 days of accident-free driving. It was announced that the fleet will continue to make available a $300 pool at the

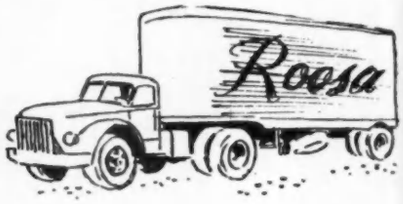
(TURN TO PAGE 150, PLEASE)

### The Long, Long Trailer



**Not long ago, Frank Beyer, plant manager, and Harry Crank, chief engineer and sales manager, of the tank trailer manufacturing division of Trailmobile Inc., in Springfield, Mo., found themselves building an asphalt-carrying tank trailer so long that its far end threatened to extend over the state line into Arkansas. "How long do you suppose it is?" Frank inquired. "I'd like to know," Harry said. So, Harry and Frank set up their equipment and found out, not only that it was not "swaybacked," but perfectly straight and that it was 45 ft, 8½ in. long. With tractor attached, the complete outfit would be 60 ft long.**


new way to get the most out of your diesels

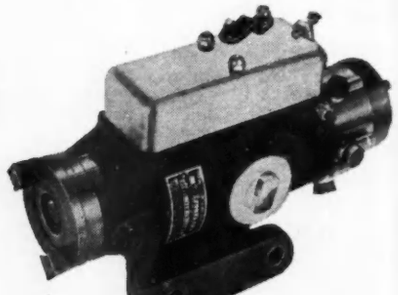



Install Roosa Master . . . the modern fuel injection pump that pays big dividends not only in performance but also in low maintenance costs.

Simple • compact • lightweight . . . Roosa Master offers performance-proven life, trouble-free fuel injection for all major types of high speed diesel engines . . . and is readily interchangeable with most existing pumps.

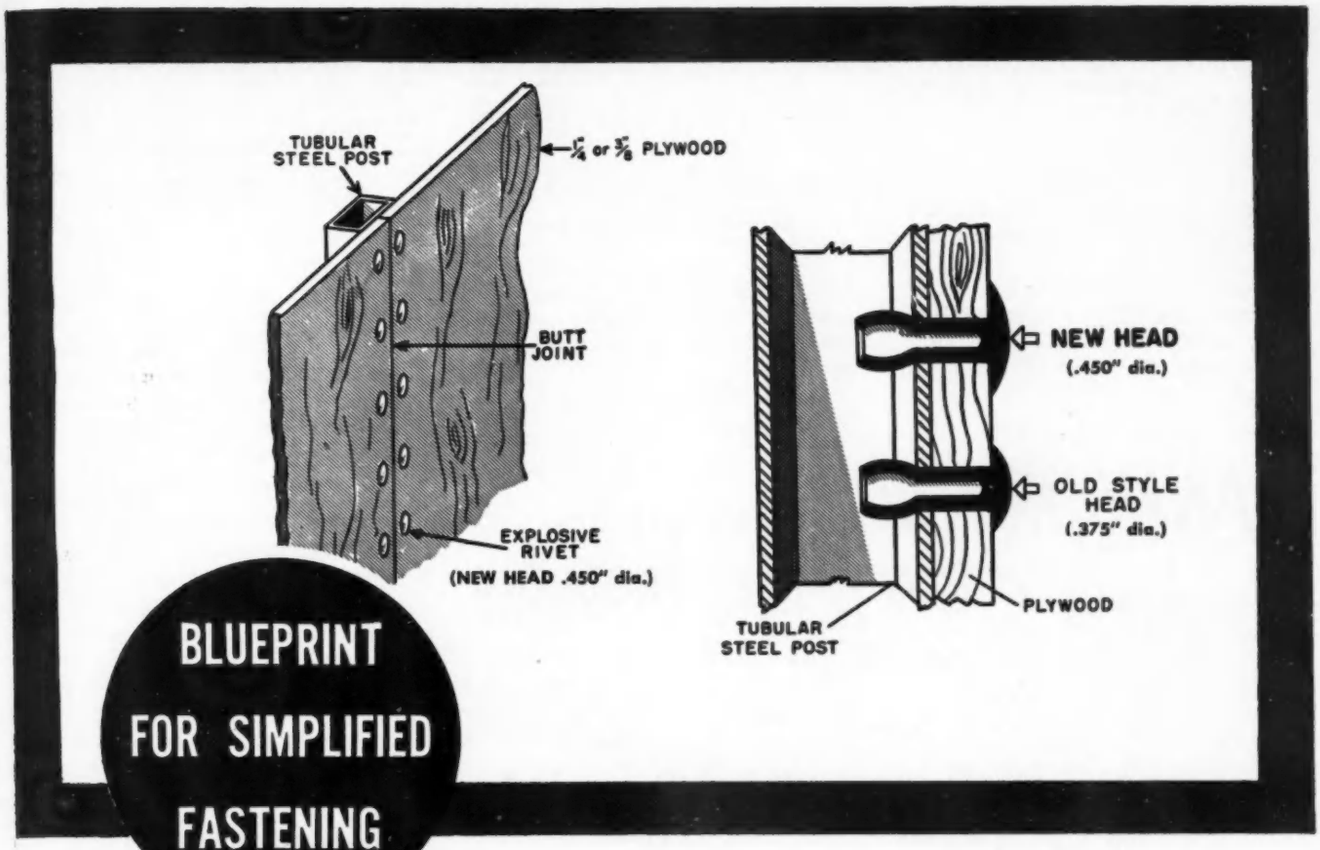
Because of its simplicity of design and construction, Roosa Master is extremely easy to service right in the field. Perfected after 15 years of engineering research and extensive field experience, Roosa Master is manufactured by Hartford Machine Screw Company, one of New England's leading manufacturers of precision machined products, and backed by a 75 year old tradition of integrity and dependable customer service.

For complete facts on Roosa Master write the Hartford Machine Screw Company, Hartford 2, Conn., or consult your engine manufacturer.



ROOSA MASTER
THE MODERN FUEL INJECTION PUMP

MAKES GOOD DIESELS BETTER




BLUEPRINT FOR SIMPLIFIED FASTENING

# Get 44% more holding power with new Du Pont Plywood Lining Explosive Rivets

Now you can fasten plywood linings tighter than ever—with *new* Du Pont Plywood Lining (.450" head) Explosive Rivets. Designed for applying plywood linings, these sturdy fasteners offer *44%* more bearing area than conventional rivets . . . *44%* greater gripping power!

And fastening's easy. You simply:

**1. Drill holes in plywood and metal post (left illustration).**

**2. Insert Plywood Lining Rivet.**

**3. Apply heated iron to Rivet head.**

That's all it takes . . . Rivet shank expands almost instantly, joining parts securely (right, above). Fast—you can set up to 25 a minute, with no after-finishing required. One-man job, too, eliminating need of bucking bar. And check the results: linings are "stitched" tight, yet the smooth Rivet head won't pull through the wood or damage delicate cargoes. Assembly work is swift—simple—sure!

**So for stronger** fastening on plywood linings, use the rivet made for the job—new Du Pont Plywood Lining (.450" head) Explosive Rivets. Test them in your plant soon. Available in 3/16" diameter, with varying grip ranges to meet your needs. For more details, contact your jobber or write: E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

**GRIP RANGES AND SHANK LENGTHS**

| Nominal Grip | 1/16" | 1/8" | 3/16" | 1/4" | 3/8" | 7/16" | 1/2" |
|---|---|---|---|---|---|---|---|
| Maximum Grip | .073" | .135" | .198" | .260" | .385" | .448" | .510" |
| Minimum Grip | .010" | .010" | .073" | .135" | .260" | .323" | .385" |
| Shank Length | .245" | .307" | .370" | .432" | .557" | .620" | .682" |

**DU PONT**

**INDUSTRIAL EXPLOSIVE RIVETS**

*A Product of Du Pont Explosives Research*

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

## July Roundup

Continued from Page 148

end of each 90-day period for award to accident-free drivers.

Akers Motor Lines, Gastonia, N. C. —ATA awards for accident-free records from one to 14 years went to 254 drivers, and company awards for six months to 17 years of safe driving went to 349 drivers.

Cleveland, Columbus & Cincinnati Highway, Inc., Cleveland, Ohio—to 115 drivers. Awards ranged from gold pins to gold watches. Three of the drivers have a 14-year or better record.

Denver-Chicago Trucking Co., Denver, Colo.—to 37 drivers. Top man, with a 15-year no-accident record, received a telescopic rifle, a revolver, fishing and camping equipment and a trophy. Three drivers with 10-year record received $500 diamond rings.

### 1954 Domestic Truck Factory Sales by G.V.W.*

| | 5,000 lb. and less | 5,001-10,000 | 10,001-14,000 | 14,001-16,000 | 16,001-19,500 | 19,501-26,000 | Over 26,000 | Total |
|---|---|---|---|---|---|---|---|---|
| January | 41,010 | 15,131 | 3,323 | 14,126 | 2,880 | 4,128 | 2,965 | 83,563 |
| February | 34,000 | 13,585 | 2,817 | 11,805 | 2,771 | 4,731 | 2,789 | 72,498 |
| March | 39,232 | 16,433 | 3,343 | 14,774 | 3,257 | 4,807 | 3,308 | 85,154 |
| April | 35,845 | 15,236 | 3,288 | 14,390 | 2,960 | 4,723 | 2,997 | 79,439 |
| Total—4 Mos. 1954 | 150,087 | 60,385 | 12,771 | 55,095 | 11,868 | 18,389 | 12,029 | 320,624 |
| Total—4 Mos. 1953 | 195,503 | 81,851 | 17,422 | 60,744 | 15,816 | 33,159 | 16,426 | 420,921 |

*—Automobile Manufacturers Association.


ANNOUNCING A FEW OF THE NEW HANSEN PRODUCTS

One-Two-Three-unit HANSEN LOCKS

1 UNIT — 1-UNIT* LOCK and FLUSH HANDLE. Locks door at ONE point—center. Locking Latch, 1" wide, attached to Flush Handle. Latch lifts or lowers by turning operating handle. Lock No. 101-S — 3¾" I.D., 4⅞" O.D., ½" deep. 101-L—4½" I.D., 6" O.D., ½" deep. (*Locking point.)

for door CENTERS

2 UNIT — 2-UNIT* LOCK and FLUSH HANDLE. Locks door at TWO points—top and bottom. Lock fitted with two rods, 30" long, with rod guides and springs. Rods cut to length to suit door height. Lock No. 102-S; FLUSH HANDLE, 4⅞" O.D. 102-L, 6" O.D. (*Locking points.)

TOP and BOTTOM of doors

3 UNIT — 3-UNIT* LOCK and FLUSH HANDLE. Locks door at THREE points—center, top and bottom. Locks at center by latch; at top and bottom by ends of rods. Lock complete includes two 30" rods and Flush Handle with Latch 1" wide. Lock No. 103-S; FLUSH HANDLE, 4⅞" O.D. 103-L, 6" O.D. (*Locking points.)

TOP CENTER and BOTTOM

REQUEST COMPLETE DETAILS

A. L. HANSEN MFG. CO.

5047 RAVENSWOOD AVE. CHICAGO 40, ILL.

HANSEN HARDWARE for Commercial Bodies


### Chrysler Proving Grounds

Human interest highlight of Chrysler's Proving Ground Show (see picture below) near Detroit June 16 was provided with a 60,000 lb GVW Dodge tractor tandem-trailer combination. The driver deftly maneuvered the huge vehicle through typical rodeo obstacle courses, including the barrel run, curb parking between barriers, and straight driving between rubber balls without a bobble. At the finish there was a flurry of motion in the cab involving a quick peel of cap and jacket, revealing the driver as petite Miss Sarah Ann (Sammy) Chapin, chief pilot of Essex Wire Corp. She had been trained to drive the course in four days by Earl Givens, safety director for Geo. S. Alger Co.

(TURN TO PAGE 181, PLEASE)

### Proving Grounds, Old and New

**At top is Dodge's 1915, wooden-plant proving ground and a string of new Dodge's being tested for engine and brake performance on the hill and checked for speed on the circular track. Below is Chrysler's 1954 circular track, only one section of the company's new, 4000-acre proving grounds opened the middle of last month in Chelsea, Mich. The 4.7 mile long, six-lane wide oval is designed to permit speeds up to 140 mph with no side thrust.**

July • August

T/M TRAIL-MOBILE

VACATION SERVICE SPECIALS

*There's a T/M Branch Near You—*

**ALABAMA**
BIRMINGHAM • 2721 Fifth Ave. S.
**ARKANSAS**
LITTLE ROCK • Club Rd. at Hot Springs Hwy.
**CALIFORNIA**
LOS ANGELES • 1754 East 46th Street
OAKLAND • 640 Hegenberger Rd.
SAN FRANCISCO • 2030 Third Street
**COLORADO**
DENVER • 5200 Colorado Blvd.
**CONNECTICUT**
NEW HAVEN • Boston Post Rd.
**FLORIDA**
JACKSONVILLE • 1030 Wilcox Street
MIAMI • 2133 N.W. - 11th Ave.
TAMPA • 211 S. Tampa Street
**GEORGIA**
ATLANTA • 780 Lake Avenue, N.E.
**ILLINOIS**
CHICAGO • 3301 S. Justine Street
EAST PEORIA • 1235 W. Washington
ROCKFORD • 2230 Seventh Avenue at Miller
**INDIANA**
INDIANAPOLIS • 1531 Stadium Drive
**KENTUCKY**
LOUISVILLE • 424 River Road
**LOUISIANA**
NEW ORLEANS • Deckbar Ave. & I.C.R.R.
**MASSACHUSETTS**
BOSTON • 282 Mystic Avenue, Medford
**MARYLAND**
BALTIMORE • 1403 Rome Road
**MICHIGAN**
DETROIT • 4111 Central Avenue
GRAND RAPIDS • 1st & Turner Streets, N.W.
SAGINAW • 314 W. Genesee Ave.
**MINNESOTA**
ST. PAUL • 2654 University Avenue
**MISSOURI**
KANSAS CITY • 1609-15 Locust Street
ST. LOUIS • 1409 Howard Street
SPRINGFIELD • E. Highway 66 at Biesiegel Rd.
**MISSISSIPPI**
JACKSON • Fannin Road
**NEBRASKA**
OMAHA • 1112 Capitol Avenue
**NEW JERSEY**
NEWARK • 58-62 Montgomery Street
**NEW MEXICO**
ALBUQUERQUE • 824 Arno Street, N.E.
**NEW YORK**
ALBANY • Stop 17½, Albany-Schenectady Rd.
BUFFALO • 650-58 Exchange Street
LONG ISLAND • 42-20 Crescent Road
SYRACUSE • Thompson Rd. & Burnet Ave.
**NORTH CAROLINA**
CHARLOTTE • 2019 North Tryon Street
GREENSBORO • Highpoint Highway
**OHIO**
AKRON • 792 S. Main Street
CINCINNATI • 1049 Dalton Street
CLEVELAND • 1808 E. 22nd Street
COLUMBUS • 175 W. Spruce
DAYTON • 1749 Stanley
TOLEDO • 624 Brown Avenue
YOUNGSTOWN • 1908-10 Belmont Street
**OKLAHOMA**
OKLAHOMA CITY • 1012 W. California
TULSA • 2111 S. Quannah
**OREGON**
PORTLAND • 2166 N. W. Wilson
**PENNSYLVANIA**
ERIE • 1221 Walnut Street
LANCASTER • 1201 Marshall Avenue
PHILADELPHIA • 2852 Memphis Street
PITTSBURGH • 3310 Penn Avenue
**TENNESSEE**
MEMPHIS • 1727 Florida
NASHVILLE • 219 Lafayette
**TEXAS**
DALLAS • Plantation Dr. & Harry Hines Blvd.
HOUSTON • 949 Lockwood Dr.
SAN ANTONIO • 214 S. W. Military Dr.
**UTAH**
SALT LAKE CITY • 365 W. 1370 South
**VIRGINIA**
NORFOLK • 1615 Broadcreek Rd.
RICHMOND • Brook Road at Lombardy
**WASHINGTON**
SEATTLE • 153 Michigan
SPOKANE • E. Front Street
**WEST VIRGINIA**
HUNTINGTON • 2221 Fifth Avenue
**WISCONSIN**
GREEN BAY • 1212 Velp Avenue
MADISON • Hwy. 30 near Junct. Hwy. 51
MILWAUKEE • 415 S. Third Street

**TRAILMOBILE INC.**

The Trend is to TRAILMOBILE

*Subsidiary of Pullman Inc.*

# July Roundup

Continued from Page 150

## 1954 Truck Trailer Shipments

| | April | Four Months |
|---|---|---|
| **Vans** | | |
| Insulated and refrigerated: | | |
| Steel | 55 | 173 |
| Aluminum | 188 | 837 |
| Furniture: | | |
| Steel, Aluminum | 184 | 511 |
| All other closed-top vans: | | |
| Steel | 437 | 1,989 |
| Aluminum | 665 | 2,653 |
| Open-top: | | |
| Steel | 60 | 301 |
| Aluminum | 82 | 311 |
| Total—Vans | 1,671 | 6,775 |
| **Tanks:** | | |
| Petroleum | 506 | 1,678 |
| All other | 85 | 248 |
| Total—Tanks | 591 | 1,924 |
| **Pole, Pipe and Logging:** | | |
| Single Axle | 51 | 216 |
| Tandem Axle | 92 | 235 |
| Total | 143 | 451 |
| **Platforms:** | | |
| Racks, livestock and stake | 44 | 196 |
| Grain bodies | 45 | 168 |
| Platforms (flats), all types | 414 | 1,581 |
| Total—Platform | 503 | 1,945 |
| Low-bed heavy haulers | 208 | 1,724 |
| Dump trailers | 100 | 282 |
| All other trailers | 1,045 | 4,355 |
| Total—Complete Trailers | 4,259 | 17,456 |
| Chassis only | 211 | 774 |
| Total—Trailers and Chassis | 4,470 | 18,230 |

## Piggy Back Summary

In the middle of last month, the Interstate Commerce Commission suspended until Jan. 15, 1955, tariffs filed by six railroads providing for trailer-on-flatcar service using railroad owned or leased trailers at competitive common carrier truck rates.

The ICC action came as a result of protest filed by American Trucking Association's Regular Common Carrier Conference, Central States Motor Freight Bureau, Eastern Central Motor Carrier Assn. and Middle Atlantic Conference. Said the protest: the tariffs as filed offer motor carrier service at motor carrier rates by railroads for which they have no operating authority.

The suspension action will not be consolidated with the ICC's "piggyback" hearings that were scheduled to begin June 28, 1954. These hearings are an attempt to arrive at answers to the now-famous 12 questions—reduced from 21—originally submitted to the ICC by the New York, New Haven & Hartford Railway concerning the regulatory aspects of rail-trailer service. (The 12 questions appeared in CCJ, May, 1954, issue, pp. 174, 176.)

At the time of the ICC's action,

(TURN TO NEXT PAGE, PLEASE)

# Introducing . . .

. . . **Harry L. White**, promoted to sales manager, Autocar Division, The White Motor Co., Exton, Pa.

. . . **Thomas F. Robertson**, appointed managing director, Irregular Route Common Carrier Conference.

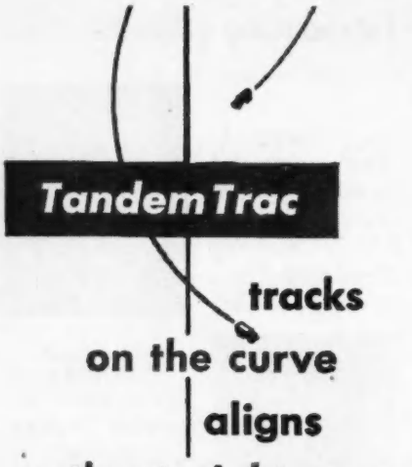
. . . **Max L. Strausser**, appointed lease sales division manager, The White Motor Co., Cleveland, Ohio.

. . . **Leonard O. Zick**, named president, Allen Electric & Equipment Co., Kalamazoo, Mich.

. . . **James P. Falvey**, elected president, The Electric Auto-Lite Co., Toledo, Ohio.

. . . **K. A. Goodwin**, appointed northeastern regional sales manager, Dunlop Tire & Rubber Corp., Buffalo, N. Y.

. . . **H. P. Sattler**, promoted to commercial and truck department manager, Chevrolet Motor Division, General Motors Corp., Detroit.

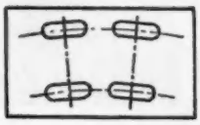


**TandemTrac**

**tracks on the curve aligns on the straight away automatically**

TandemTrac's radius rods let both axles conform to highway curves and contours — automatically align wheels on the straight-away.

TandemTrac ends tire-killing misalignment, dog tracking, maintenance problems; produces unbelievable tire life because side scuffing is virtually eliminated on truck, tractor or trailer. TandemTrac delivers trouble-free operation, greater fuel mileage; reduced maintenance costs, and more tire mileage than you'd believe possible anywhere.



TandemTrac is an all-purpose suspension for trailing axle, pushed axle, dual drive or trailer tandems. Its desirable features include variable rate springs to protect cargo and equipment; automatic 50-50 load distribution for full legal payloads. TandemTrac's big rocking-chair bearings require no lubrication, everl Feature for feature, TandemTrac weighs less, costs less to own, than any suspension you can buy.

TandemTrac was created by the Truck Equipment Co., Inc., of Buffalo, New York, for thirty years pioneers in the field of third axles, truck suspensions, and cost-reducing equipment for America's motor trucks and trailers.

Get the whole story of TandemTrac, the suspension that does the job tandems are supposed to do — and does it better. Write or mail the coupon today.

**TRUCK EQUIPMENT CO., INC.**

**1781 Fillmore Ave., Buffalo 14, N. Y.**

Gentlemen:
Please send literature describing the new TandemTrac Suspension.

NAME ..... TITLE .....

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NATURE OF BUSINESS .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....


## July Roundup

Continued from Page 181

there were 19 railroads involved in trailer-on-flatcar operation. Nine of these are presently operating the service—six for their own trailers, two for common carrier truck lines, and one is not known. In the future, 10 more probably will join the ranks. As originally announced—prior to the tariff suspensions, eight of these will be hauling their own trailers, one offering the service to common truck lines, and one piggy-backing both its own and common carrier truck line trailers. What the final box score will be depends on the outcome of the ICC hearings.

Here is how the situation would have been had not the ICC taken action.

### Up To Dec. 31, 1953

Up to Dec. 31, 1953, there were eight railroads in the "piggy-back" business:

1. Chicago Great Western provides service between Chicago and St. Paul for about 40 common carrier truck lines using regular 53-ft flatcars and collecting a division of the motor carrier's charge as its compensation.

2. New York, New Haven & Hartford also serves common carrier truck lines using about 360 especially equipped flatcars. Service is provided between New York City, New Haven, Springfield, Providence and Boston at a flat mileage rate. Business is good. The railroad has another 100 flatcars on order.

3. Southern Pacific hauls trailers for its motor carrier subsidiary. At the end of 1953, it was hauling between Los Angeles and San Francisco and between Houston and Lake Charles (La.). Since then, it has expanded its service to include between Los Angeles and Phoenix and between Houston and Lafayette (La.) and New Iberia (La.). Service between Los Angeles and San Francisco is reported to be a motor carrier competitive rate.

4. Chicago & Northwestern started on Dec. 10, 1953, hauling its own or leased trailers between Chicago and Milwaukee. Since the first of the year, additional points have been added, including service between Chicago and Green Bay, Chicago and Minneapolis-St. Paul, and Chicago and Council Bluffs-Omaha. Latest addition is service between Minneapolis-St. Paul and Duluth-Superior.

(TURN TO PAGE 184, PLEASE)

***Costs Pennies... Can Save You Dollars***

★

**INSULATES and WATERPROOFS**

- ***Ignition and Spark Plugs***
- ***Battery Cables and Wiring***
- ***Metal Trim and Woodwork***

Reduce the chances of troublesome ignition and electrical failures with waterproofing, insulating Champion Sprayon Plastic Sealer. Protect metal and wood parts from weather and wear. It's high in dielectric strength, corrosion resistant, impervious to salt spray and chemicals . . . sprays on any surface, dries quickly to non-tarnishing, flexible finish. Excellent, invisible protection for all chrome parts.

The handy 12-oz. Sprayon aerosol can fits readily into tool kit for on-the-job use by trouble-shooting mechanics. Patented non-clogging nozzle releases Freon-propelled spray with only fingertip pressure—instant, sure application. Plastic Sealer also available in bulk with special Plastic Reducer.

Champion also supplies a wide range of synthetic automotive Enamels, Lacquers and authentic tractor and implement shades in Sprayon form. Ask about bulk Champion Ultra Chrome No. 22 and Exterior Chrome No. 11 for complete body finish jobs on trucks and busses, cabs and trailers—also Champion Rust-Proof Primer with its special rust-inhibiting chemical action. Proved money-savers in vehicle maintenance!

***See your jobber or write direct.***

**Champion Bronze Powder & Paint Co., Inc.**

**2526 W. Van Buren St. Dept. COCA, Chicago 12, Ill.**

Guess how we cut maintenance costs in our fleet!

It's easy! You use **DELCO** batteries... they're original equipment on more trucks and give longer, more dependable service!

*More inside!*

# EVERY INCH AN ACTIVE STOREHOUSE OF POWER!

Length of service, cost per mile, starting power or just plain ruggedness — however you measure a battery you'll find you get more out of a Delco, because there's more built into it. Every inside inch is an active storehouse of power —working to give you more miles of trouble-free performance. Further proof that Delco puts more into a battery is the long-established fact that *there are more Delco batteries in use than any other brand!*

**FULL-SIZE PLATES**—No fillers or spacers are used in Delcos, as in some batteries that look as big. Delco is 100% an active storehouse of real power.

**POWER-FULL CASE**—Specially designed for each Delco model; newly engineered for 50% higher impact strength, withstands road shocks.

**GENEROUS LIQUID RESERVE**—Plates amply covered for 4000-6000 miles of normal driving, yet gives none of the false security of excessive reserves.

**EXCLUSIVE "EXPANDER" FORMULA**—This feature of the negative plates means greater cranking power, reduces harmful granulation. Patented! It's only in Delco!

*Always replace with a*

## DELCO BATTERY

*Original equipment on more new cars and trucks than any other brand*

A GENERAL MOTORS PRODUCT — A UNITED MOTORS LINE

## Stock This "Quadruple-Threat" Cleaner for Chasing Oily, Greasy Dirt!

Use Magnusol concentrate in any of these low-cost, time-saving and safe cleaning jobs . . .

***For Engines, Chassis and Underbodies***

Spray surfaces to be cleaned with Magnusol solution. Let soak. Then rinse with water for a really clean, labor-saving job.

***For Very Greasy Floors***

Spray or brush on solution. Let soak a few minutes. Then rinse.

***For Extra Dirty Bodies***

Spray or brush on the solution. Let soak a few minutes, then rinse with water. Dirt is gone . . . body finish is as good as new.

***For Miscellaneous Parts***

Place parts in tank containing the Magnusol mix. Take them out as needed . . . rinse with water, and you have clean, oil-free, greaseless pieces.

Magnusol is safe for all metals . . . is non-toxic and non-flammable.

***Get Acquainted with This "Quadruple-Threat" Cleaner***

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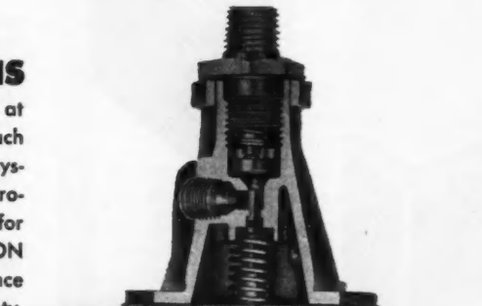
remove all trace of water, oil, etc., at the tank. Contaminants can't reach and harm vital parts of brake systems. Vastly reduces wear and corrosion. Seven years of daily service for transport firms prove WILKERSON units greatly reduce maintenance and parts expense, improve safety.

**EXTRA SAFETY BUILT IN**

Drain can't freeze, even in coldest weather. Can't leak if hit—seal is *inside* the tank.



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Automatic and Manual Units for High- or Low-Pressure Air Systems—Air Line Separators, Tank Drains, Sump Drains.

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SERVICE DISTRIBUTORS THROUGHOUT THE U. S. A.


## July Roundup

Continued from Page 182

The Chicago-Green Bay service is available at a motor carrier competitive trailer-load rate.

5. Union Pacific operates with leased trailers between Los Angeles and Las Vegas and between Los Angeles and Salt Lake City.

6. Chicago, Burlington & Quincy occasionally hauls trailers for its motor carrier subsidiary but has no regular service.

7. Atchison, Topeka & Santa Fe also occasionally hauls trailers for its motor carrier subsidiary but has no regular service.

8. Chicago & Eastern Illinois is reported to have started "piggy-backing" in 1947 but no details are available on the points covered or to whom the service is available.

### Jan. 1 - June 16, 1954

Since the first of the year, 11 railroads have announced their intention of getting into rail-trailer operation. Five of these railroads expected to be in operation or before June 16, 1954, but the ICC's suspension action stymied four of them. As originally announced, here is what the five railroads planned:

1. Great Northern began using leased, 24-ft trailers on 52-ft flatcars on May 24, 1954, contracting with local cartage tractors for delivery at destination. Service is between Minneapolis - St. Paul and Duluth-Superior.

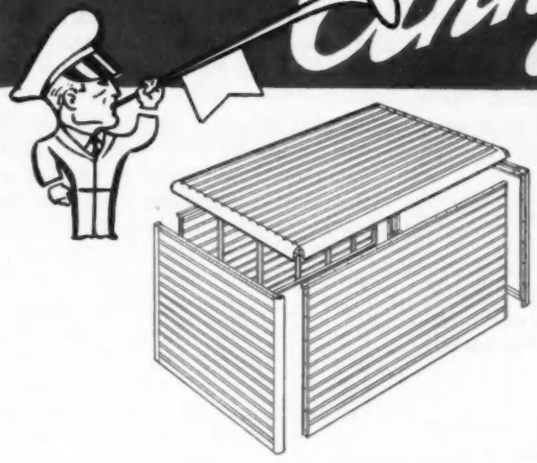
2. Pennsylvania had plans to haul between New York City (including Brooklyn, Harrison, Jersey City and Newark), Philadelphia, Pittsburgh and Chicago using leased trailers on 50ft flatcars at competitive motor carrier rates. Report was that the service might be opened later to common carrier truck lines.

3. Erie also planned New York City-Chicago service using its own or leased trailers at competitive motor carrier rates. It asked car manufacturers for bids on 100 75-ft, especially-equipped flatcars.

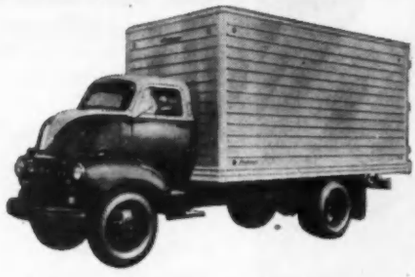
4. Delaware, Lackawanna & Western also hoped to haul its own or leased trailers at competitive motor carrier rates between New York City (Newark) and Buffalo, connecting in Buffalo with the Nickel Plate (New York, Chicago & St. Louis) for Cleveland and Chicago. It also planned connection at Buffalo with the Wabash for other mid-western points.

(TURN TO PAGE 186, PLEASE)

# Announcing Andrews NEW PRE FAB ALUMINUM TRUCK BODIES



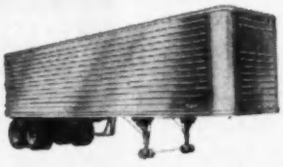
Shipped in five complete sections ready to assemble. All sections are pre-drilled for accurate, fast, easy assembly.



Andrews truck bodies available in three styles, standard van, extended rear platform, dropped frame with wheel housing. Optional: side door, aluminum floor, three styles of rear doors or gates.

# Announcing Andrews COMPLETE NEW LINE OF FREIGHT TRAILERS

"THE HEAVY LOADS GO ON ANDREWS ALUMINUM"



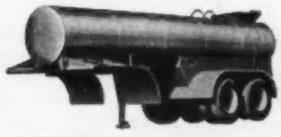
ALL-ALUMINUM TRAILER

OPEN TOP

GRAIN TRAILER

EXTERIOR POST ALUMINUM

LIVESTOCK VAN



LIQUID TRANSPORT

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FURNITURE VAN

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# Announcing Andrews "BIG MO" HIGH CUBE

Here's "BIG MO," Andrews new hi-cube trailer which gives 20% more cubic capacity than standard trailers the same length. It's aluminum with exterior posts.

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**LUBRIPLATE DIVISION**
Fiske Brothers Refining Co.
Newark 5, N. J. • Toledo 5, Ohio

## July Roundup

Continued from Page 184

5. New York, Chicago & St. Louis has been covered above.

The last four—the Pennsylvania, Erie, Lackawanna and Nickel Plate had filed tariffs that would have been effective June 16, 1954, except for the ICC's suspension.

### Beyond June 16, 1954

Another six railroads have announced plans to get into the service, but two of these have received setbacks as a result of the ICC suspension. The six are:

1. Wabash had filed a tariff at competitive motor carrier rates proposing to use its own or leased trailers effective June 28, 1954. However, it was one of the tariffs suspended by the ICC. The railway's plans were to connect with the Lackawanna and with the Lehigh Valley to provide Chicago, Buffalo and New York City service. It also planned to expand the operation at a later date to include service between St. Louis, Detroit and Chicago—on a triangular basis—and between St. Louis and Kansas City.

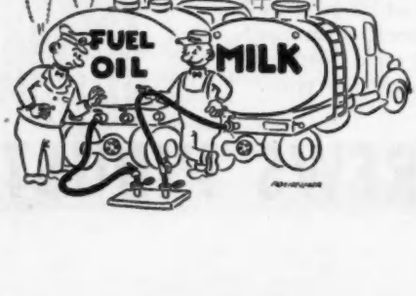
2. Lehigh Valley has been covered above.

3. Baltimore & Ohio also met with ICC suspension on its tariff scheduled to become effective July 1, 1954, offering "piggy-back" service at competitive motor carrier rates. It had planned to use 24-ft trailers on 53-ft flatcars between Philadelphia-Baltimore, Pittsburgh and Chicago, and between Cincinnati and St. Louis.

4. Missouri-Kansas-Texas has, as yet, not filed tariffs. Its plans are to start trailer-flatcar service early in July hauling both its own subsidiary motor carrier's and common carrier truck line trailers between Kansas City and Oklahoma.

5. New York Central plans to start early in the fall to haul common carrier truck line trailers between Boston, Cleveland and Chicago. Later this year the service will be expanded to include Detroit and New York City (Bergen, N. J.). It is considering service to St. Louis, Indianapolis and Pittsburgh. Announced plans call for special terminals to be built at these points. Robert R. Young's initial statement as new chairman of the board of the New York Central gave no indication that these plans would be changed. As announced, trailers will be hauled two on a 75-ft special flatcar at a mileage rate. A hint that the Central might carry its own trailers in the service was contained in its request to the ICC for "substitute-motor-for-rail" service in New York, New Jersey, Pennsylvania, Michigan, Ohio, Indiana, Illinois and Massachusetts, docketed as MC67916 Sub14.

6. Reading is the last railroad that has made announcement of its intention to get into the act but has not said what points it intends to cover. The railroad does plan to limit the service to "shippers," probably in conjunction with its subsidiary motor carrier.





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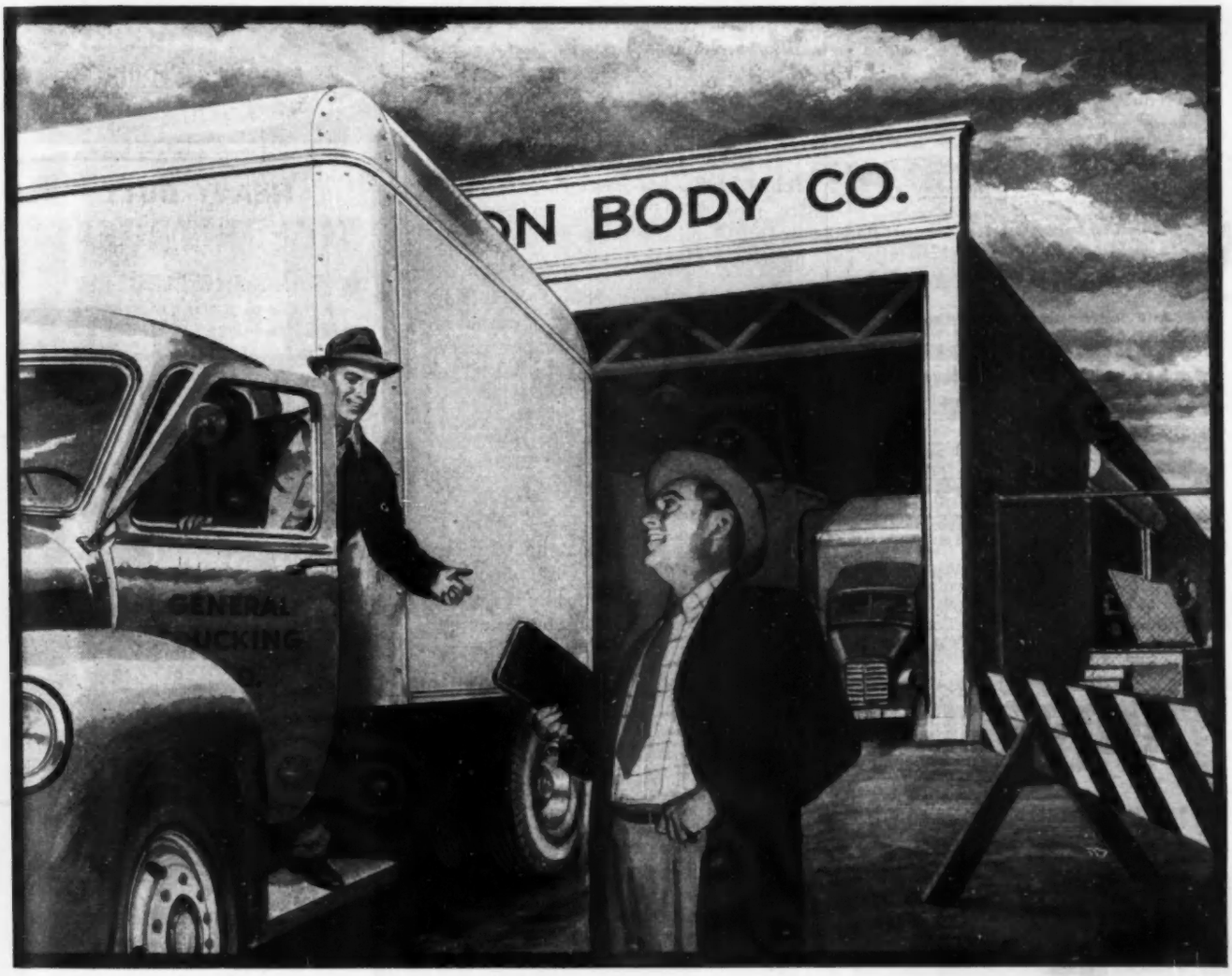


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The many advantages of Alcoa® Aluminum for truck bodies have long been recognized by leading fleet owners. Its light weight has paid off in more payload, less wear on tires and chassis, more miles per gallon of fuel. Its corrosion resistance has given tremendous increases in body life... and cut maintenance costs in hundreds of cases.

***And now, Alcoa offers another plus feature.***

Your local truck body builder can offer you an aluminum body—built to your exact specifications —with precision-engineered Alcoa Shapes... designed by Alcoa. These shapes put the metal where it's needed—eliminate the causes of high building costs for individual designs.

Ask your truck body builder about your next body —built of Alcoa Shapes. If he doesn't yet know about them, refer him to his nearby Alcoa distributor. For complete information write for the new booklet, *Profitable Trucking With Alcoa Aluminum Truck Bodies.* ALUMINUM COMPANY OF AMERICA, 1876-G Alcoa Building, Pittsburgh 19, Pa.

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Speed Truck Tire Changes
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Quality tools for trucks, buses, farm tractors, and aircraft. Hand forged from chrome nickel alloy steel. Tougher, last much longer!

T-19 24" Truck and Bus Straight Spoon
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T-29 18" Tool for starting first bead down over rim
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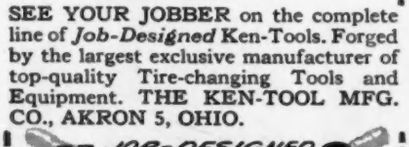
JOB-DESIGNED KEN-TOOL LOCK RING REMOVERS stand up under tremendous leverage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## Fleet Notes

**Interstate Motor Freight System,** Grand Rapids, Mich., announces a record operating revenue of $26,249,549 for 1953. Earnings for 1953 were reported at $824,073.

**Tamiami Trail Tours, Inc.,** Tampa, Fla., announces that its Tampa terminal drivers were winners of the fleet's 1953 interterminal safety contest.

**Eastern Motor Express, Inc.,** Terre Haute, Ind., has begun operation in its new $750,000 Chicago terminal. Over 2½ million tons of freight can be handled in 24-hr operation.

**Harrison Motor Freight,** Hillside, N. J., has opened a new terminal in Worcester, Mass., and announces expanded facilities at its home offices for freight handling.

**Cooper-Jarrett, Inc.,** has purchased a 3½ acre site for a new terminal in Philadelphia. It will handle 50 trailers at the dock.

**Hayes Freight Lines, Inc.,** Springfield, Ill., announces it will donate a 4-yr college scholarship to the state winner of the Illinois Junior Chamber of Commerce "junior citizenship award" project.

## Factory Flashes

**B. F. Goodrich Co.,** Akron, Ohio, has announced plans to spend about $30,000,000 for new and improved facilities during 1954, about a 35 per cent increase over last year's expenditures for the same purpose.

**Purolator Products, Inc.,** Rahway, N. J., reports consolidated net income for 1953 or $975,000 as compared to $801,409 in 1952. Sales in 1953 reached $24 million as compared to $21 million in 1952.

**American Overseas and Chartering Corp.,** New York City, has produced a 15 min, color film illustrating the company's trailer-ship operation on the Hudson River between New York City and Albany.

**Motor Wheel Corp.,** Lansing, Mich., reports 1953 net earnings of over $2.9 million, up 15 per cent over 1952. Net sales for 1953 were $84.2 million compared with $68.8 million in 1952.

**Seiberling Rubber Co.,** Akron, Ohio, earnings for 1953 were 9 per cent higher than 1952, totalled $1,035 million. Net sales in 1953 reached $40.351 million.

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MOTOR OIL
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